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Installation documentation

for Thermo Top Evo water heater

Peugeot 3008 / 5008

Left-hand drive vehicle

Manufacturer	Model	Type	Model year	EG-BE-No. / ABE
Peugeot	3008 / 5008	M	2017	E2*2007/46*0534*…

Motorisation	Fuel	Emission standard	Transmission type	Out-put[kW]	Displace-ment[cm³]	Engine code
1.6 THP	Petrol	Euro 6	AG	121	1598	5G01
2.0 HDi	Diesel	Euro 6	8-speed AG	130	1997	AH01
2.0 HDi	Diesel	Euro 6	AG	133	1997	AH01

Validity	Equipment variants	Model	
		3008	5008
Verified equipment variants	2 zone automatic air-conditioning	x	x
	Halogen main headlights	x	x
	LED main headlights	x	x
	LED daytime running lights	x	x
	Halogen front fog lights	x	x
	LED front fog lights	x	x
	Automatic Start-Stop system	x	x
	Start button	x	x
	Alarm system		x
Unverified equipment variants	Manual air-conditioning	x	x
	Alarm system	x	

Total installation time	Note
10.5 hours	

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1 List of abbreviations

AG	Automatic transmission
ASH	Spacer bracket
DP	Fuel pump
EFIX	Exhaust end fastener
FF	FuelFix (tank extracting device)
HG	Heater
K2	Additional relay
MCC	MultiControl (control element)
PWM	Pulse width modulator
RSH	Relay and fuse holder of passenger compartment
SH2	Engine compartment fuse holder for F1/F2
UP	Coolant pump

2 Installation notes

2.1 Information on Validity

This installation documentation applies to vehicles listed on page 1, assuming technical modifications to the vehicle do not affect installation, any liability claims excluded. Depending on the vehicle version and equipment, modifications may be necessary during installation with respect to this installation documentation. Vehicle and engine types, equipment variants and other specifications not listed in this installation documentation have not been tested. However, installation according to this installation documentation may be possible.

2.2 Components used

Designation	Order number
Basic delivery scope of Thermo Top Evo	In accordance with price list
Installation kit for Peugeot 3008 / 5008 petrol / diesel 2017	1326552B
In case of control element, as well as Telestart indicator lamp, in consultation with end customer	In accordance with price list

2.3 Information on Total Installation Time

The total installation time includes the time needed for mounting and demounting the vehicle-specific components, the heater specific installation time and all other times required for the system integration and initial start-up of the heater.
The total installation time may vary for vehicle equipment other than provided.

2.4 Installation recommendations

Arrange for the vehicle to be delivered with the tank only about ¼ full.
For the MultiControl CAR option, the recommended installation locations for the Telestart or ThermoCall push button should be confirmed with the end customer.
Depending on the space required and the vehicle manufacturer's instructions, we recommend the use of a vehicle battery with a higher electrical capacity.

3 About this document

3.1 Purpose of the document

This installation documentation is part of the product and contains all the information required to ensure professional vehicle specific installation of the:

Thermo Top Evo heater

3.2 Warranty and liability

Webasto shall assume no liability for defects, damage and injuries resulting from a failure to observe the installation, repair and operating instructions of the information contained in them.

This liability exclusion particularly applies to improper installations and repairs by untrained persons or in the case of a failure to use genuine spare parts.

The liability due to culpable disregard to life, limb or health and due to damage or injuries caused by a wilful or reckless breach of duty remain unaffected, as does the obligatory product liability.

Installation should be carried out according to the general, standard rules of technology. Unless specified otherwise, fasten hoses, lines and wiring harnesses to original vehicle lines and wiring harnesses using cable ties. Insulate loose wire ends and tie back. Connectors on electronic components must audibly snap into place during assembly.

Spray unfinished body areas, e.g. drilled holes, with anti-corrosion wax (Tectyl 100K).

Observe the instructions and guidelines of the respective vehicle manufacturer for demounting and mounting vehicle specific components.

The initial start-up is to be executed with the Webasto Thermo Test Diagnosis.

When installing a programmable control module (e.g. a PWM Gateway), the corresponding settings must be checked or adjusted.

3.2.1 Statutory regulations governing installation

The Thermo Top Evo heater has been type-tested and approved in accordance with ECE-R 10 (EMC) and ECE-R 122 (heater). The regulations of these guidelines are binding in the scope of the Directive 70/156/EEC and/or 2007/46/EC (for new vehicle models from 29/04/2009) and should also be observed in countries in which there are no special regulations.

The heater is licensed in accordance with paragraph 19, section 3, No. 2b of the StVZO (German Road Traffic Licensing Authority).

3.3 Safety

Qualifications of installation personnel

The installation personnel must have the following qualifications:

- Successful completion of Webasto training
- Corresponding qualification for working on technical systems

Regulations and legal requirements

The regulations from the heater's general installation and operating instructions must be observed.

3.3.1 Safety information on installation

Danger posed by live parts

- ▶ Prior to installation, disconnect the vehicle from the voltage supply.
- ▶ Make sure the electrical system is earthed correctly.
- ▶ Always comply with legal requirements.
- ▶ Observe data on type label.

Danger of fire and leaking toxic gases due to improper installation

- ▶ Vehicle parts in the vicinity of the heater must be protected against excessive heating by the following measures:
  - ⇨ Maintain minimum safety distances.
  - ⇨ Ensure adequate ventilation.
  - ⇨ Use fire-resistant materials or heat shields.

Danger due to sharp edges

- Lacerations
- Short circuit due to electrical wire damage

- ▶ Fit protectors on sharp edges.

3.4 Using this document

Before installing and operating the heater, read this installation documentation, the installation instructions of the heater, the operating instructions and supplementary sheets provided.

3.4.1 Explanatory Notes on the Document

There is an identification mark near the respective work step to allow you to quickly allocate the other applicable documents to the Webasto components to be installed:

Generally valid Webasto documentation	
Vehicle-specific installation documentation	K
Vehicle-specific installation documentation of the cold start kit	M
Webasto Comfort A/C control	H
Webasto Standard A/C control	G
Tank extracting device (e.g. FuelFix)	F
Exhaust end fastener (EFIX)	E
Combustion air intake silencer	L
Spacer bracket (ASH)	S

3.4.2 Use of symbols

DANGER

Type and source of the risk

Consequences: Failure to follow the instructions can result in death

▶ Actions to protect yourself against risks.

WARNING

Type and source of the risk

Consequences: Failure to follow the instructions can lead to serious or even fatal injuries

▶ Actions to protect yourself against risks.

CAUTION

Type and source of the risk

Consequences: Failure to follow the instructions can lead to minor injuries

▶ Actions to protect yourself against risks.

Type and source of the risk

Consequences: Failure to follow the instructions can lead to material damage

▶ Actions to protect yourself against risks.

Reference to the vehicle manufacturer's specific documents.

Note on a special technical feature

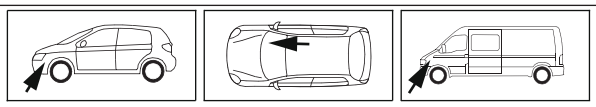
3.4.3 Work step identification marks

The ongoing work step is indicated on the outside top corner of the page:

Mechanical system	Electrical system	High-voltage	Coolant

Combustion air	Fuel	Exhaust	Software

3.4.4 Orientation aid



The arrow indicates the position on the vehicle and the viewing angle

3.4.5 Use of highlighting

Highlight	Explanation
▶	Necessary action
⇨	Result of an action
1 / 12 / a1	Position numbers for the image descriptions
① / ⑫ / Ⓐ	Position numbers for the image descriptions for electrical wires and coolant hose sections

4 Technical Information

Dimension specifications
– All dimensions specified in mm
– Perforated brackets and mounting angles are shown to scale
– Observe data regarding scale on the templates

Tightening torque specifications
– Tightening torque values of 5x13 heater bolts and 5x11 heater stud bolts = 8Nm
– Tightening torque values of 5x15 retaining plate of water connection piece bolts = 7Nm
– 5x12 bolt tightening torque of 2-part heater bracket = 6Nm
– Tighten other bolt connections in accordance with manufacturer's instructions or in accordance with state-of-the-art-technology

Specified temperature for fabric heat shrink tubing
– Shrink temperature max. 230°C

Necessary special tools
– Hose clamp pliers for auto-tightening hose clamps
– Hose clamp pliers for Clic hose clamps of type W
– Hose clamping pliers
– Hose cutter
– Automatic wire stripper 0.2 - 6 mm^2
– Crimping pliers for cable lugs 0.5 – 10 mm^2
– Crimping pliers for male connector 0.14 – 6 mm^2
– Crimping pliers for connector 0.25 – 6 mm^2
– Torque wrench for 2.0 - 10 Nm
– Deep-hole marker
– Metric thread-setter kit
– Webasto Thermo Test Diagnosis with current software

5 Preparing measures

5.1 Vehicle preparation

Further information can be found in the vehicle manufacturer's technical documentation.

Vehicle area	Components to be removed	Other applicable documents
General	▶ Open the fuel tank cap ▶ Ventilate the fuel tank ▶ Close the fuel tank cap again ▶ Depressurise the cooling system	
Engine compartment and body	▶ Battery and battery carrier ▶ Engine control unit ▶ Engine compartment fuse and relay box cover ▶ Front wheel on the driver's side ▶ Wheel well trim on the driver's side ▶ Engine underride protection ▶ Underride protection at the back on the front passenger's side ▶ Horn	
Passenger compartment	▶ Instrument panel part as per the dismantling instructions for the electrical system in the passenger compartment ▶ Detach the rear seat and fold it up ▶ In case of a 7-seater, the rear middle seat ▶ Tank fitting service lid	

5.2 Heater preparation

Engine compartment	▶ Remove years that do not apply from the type and duplicate label ▶ Attach the duplicate label (type label) in the appropriate place in the engine compartment	

6 Installation overview

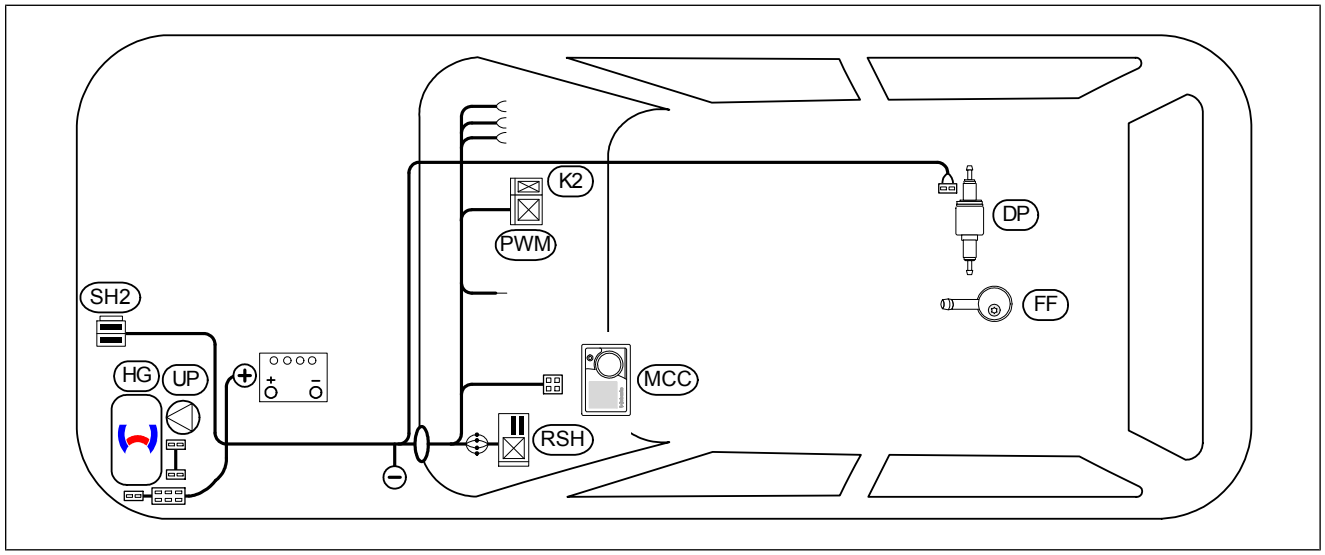


Fig. 1

Legend to installation overview

Abbreviation	Component
DP	Fuel pump
FF	FuelFix
HG	Heater
K2	Additional relay
MCC	MultiControl CAR
PWM	PWM Gateway
RSH	Relay and fuse holder of passenger compartment
SH2	Fuse holder of engine compartment
UP	Coolant pump

Heater installation location

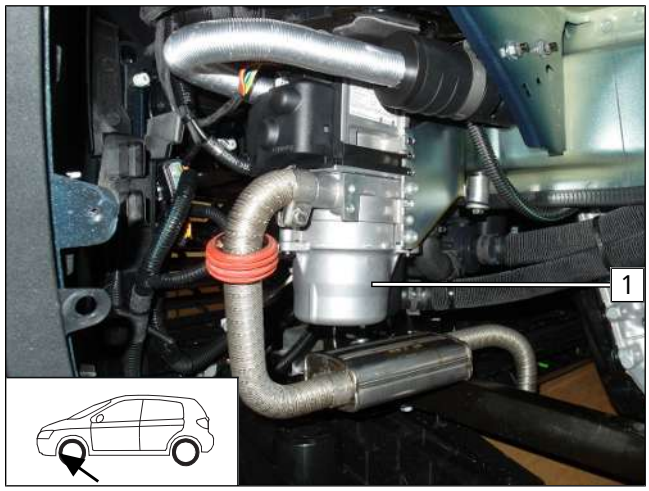


Fig. 2

1 Heater

7 Electrical system of engine compartment

7.1 Electrical system of engine compartment 1.6 P

Preparing perforated bracket of SH2

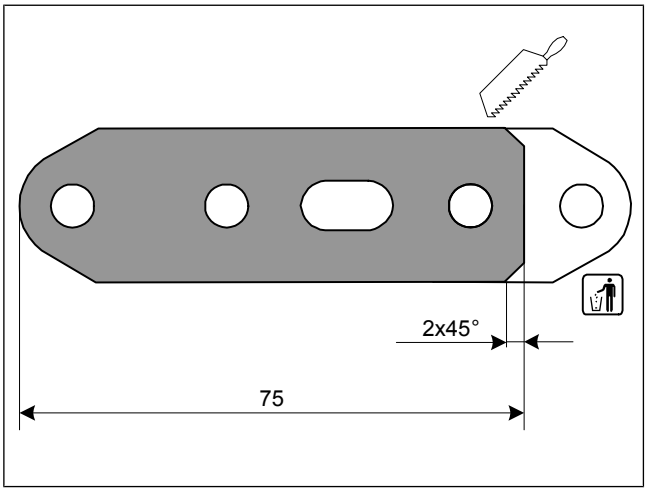


Fig. 3

Premounting fuse holder

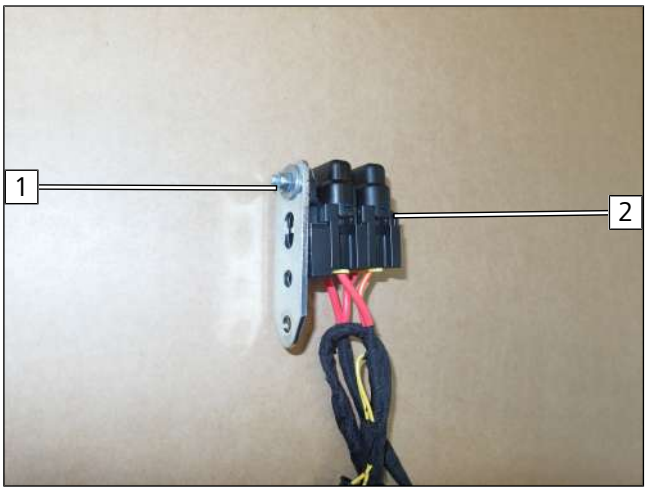


Fig. 4

1 M5x16 bolt, large diameter washer, retaining plate of SH2, perforated bracket, large diameter washer, nut

2 SH2 with F1/F2 fuses

Mounting fuse holder

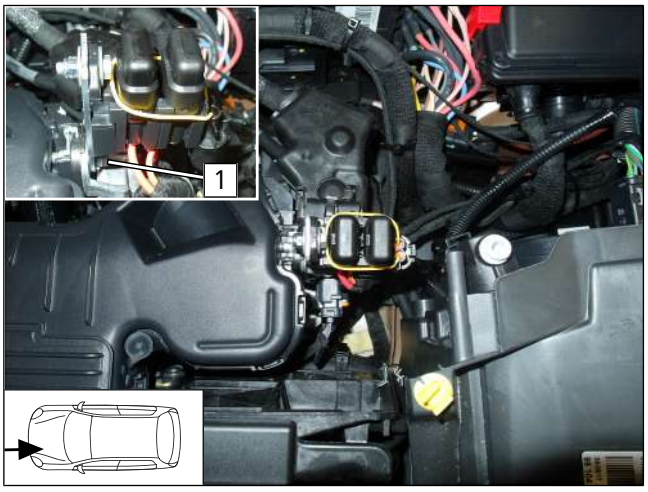


Fig. 5

1 Original vehicle bolt, SH2 premounted, original vehicle thread

Preparing positive wire installation

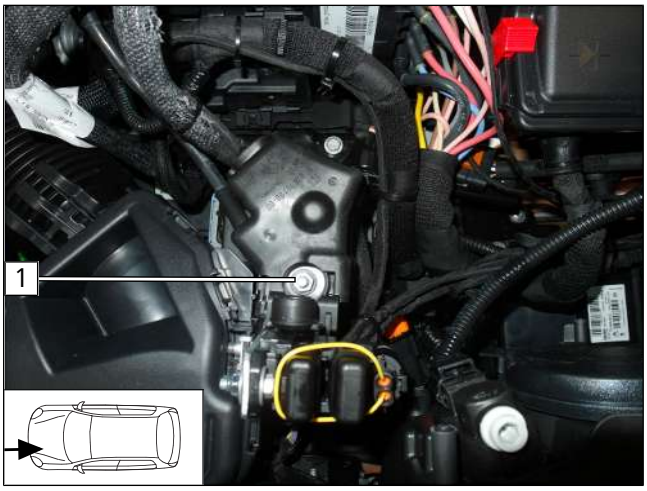


Fig. 6

▶ Unscrew nut 1 and completely fold up cover.

Installing positive wire

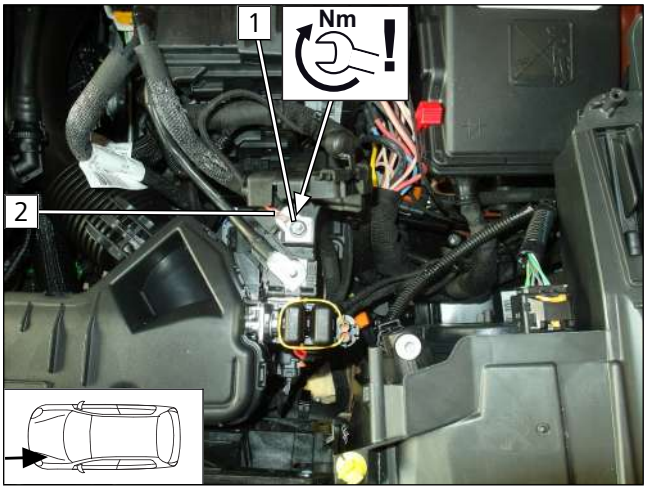


Fig. 7

DANGER

Fire hazard due to insufficient tightening torque

▶ Observe tightening torque

1 Original vehicle positive point

2 Positive wire

▶ Re-assemble the cover with nut.

Earth connection

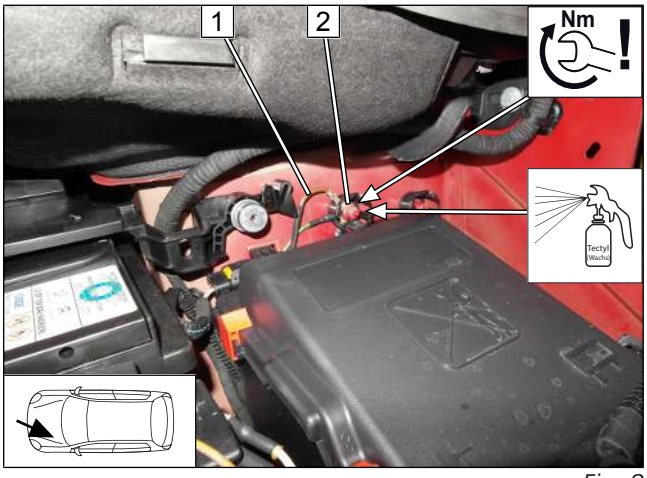


Fig. 8

DANGER

Fire hazard due to insufficient tightening torque

▶ Observe tightening torque

1 Earth wire

2 Original vehicle earth point

7.2 Electrical system of engine compartment 2.0 D

Premounting fuse holder

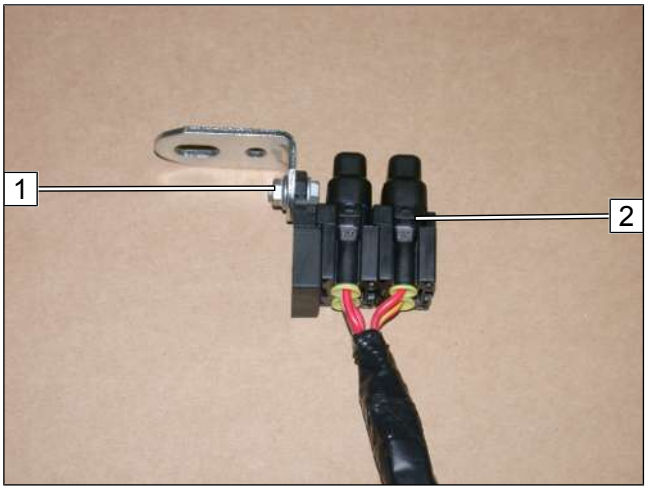


Fig. 9

1 M5x16 bolt, large diameter washer, retaining plate of SH2, angle bracket, large diameter washer, nut

2 SH2 with F1/F2 fuses

Mounting fuse holder

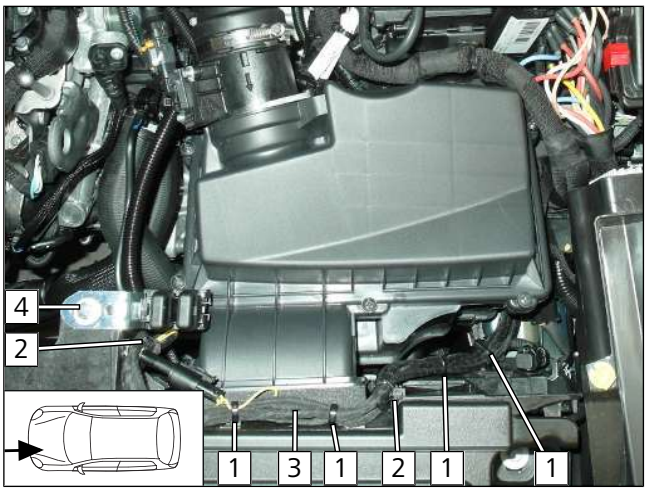


Fig. 10

▶ Route heater wiring harness 3 in the engine compartment and fasten with cable tie 1 or edge clip cable tie 2.

4 M6x20 bolt, large diameter washer, premounted angle bracket, original vehicle hole, flanged nut

Installing positive wire – 133kW

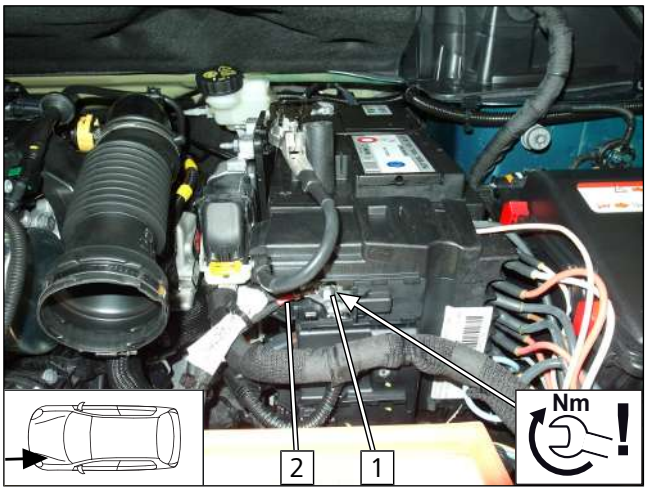


Fig. 11

DANGER

Fire hazard due to insufficient tightening torque

▶ Observe tightening torque

1 Original vehicle positive point

2 Positive wire

Installing positive wire – 130kW

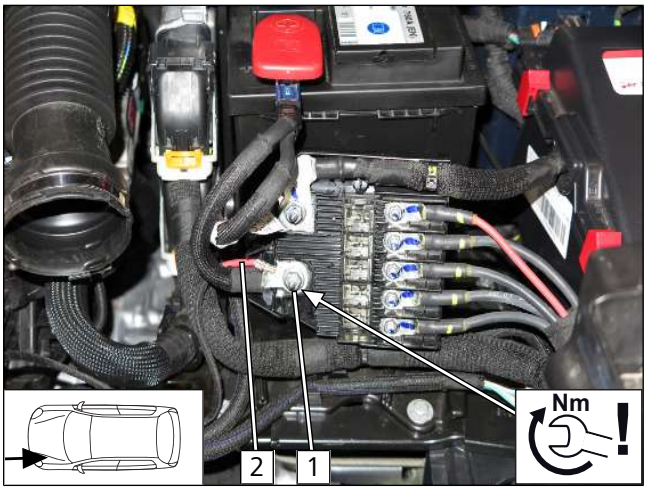


Fig. 12

DANGER

Fire hazard due to insufficient tightening torque

▶ Observe tightening torque

1 Original vehicle positive point

2 Positive wire

Earth connection

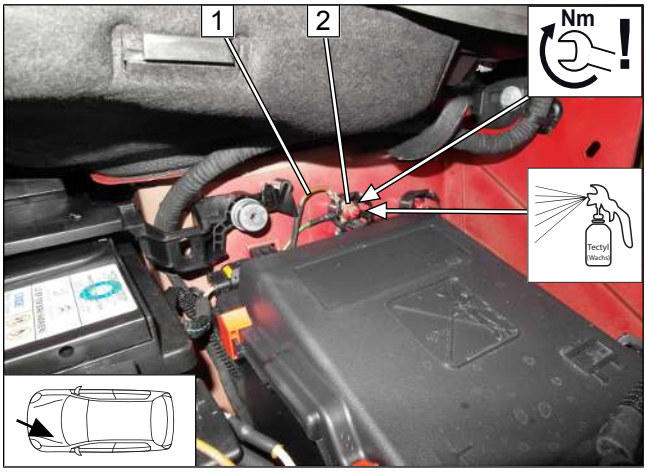


Fig. 13

DANGER

Fire hazard due to insufficient tightening torque

▶ Observe tightening torque

1 Earth wire

2 Original vehicle earth point

7.3 Passenger compartment wiring harness pass through

Removing insulation

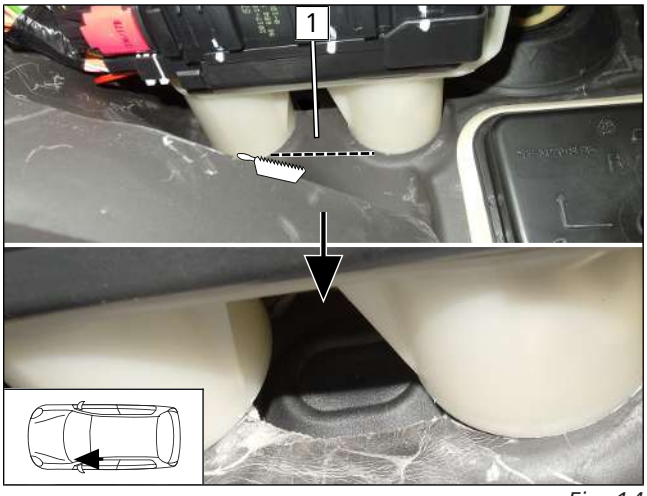


Fig. 14

▶ Cut the insulation 1 at the marking and fold it up.

Routing wiring harness

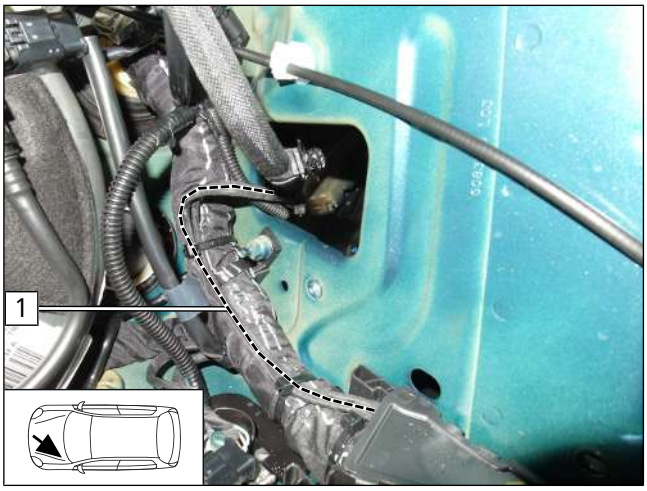


Fig. 15

▶ Route the heater and control element wiring harness 1 in the engine compartment and fasten with cable tie.

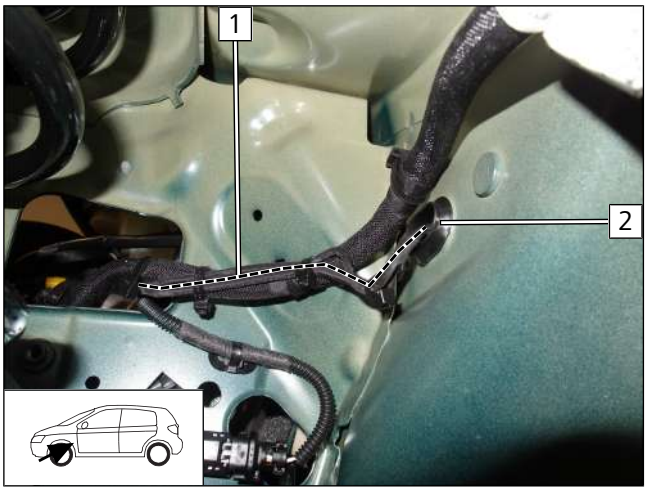


Fig. 16

▶ Route heater and control element wiring harness 1 in the wheel-well inner panel through protective rubber plug 2 into the passenger compartment.

8 Mechanical system

8.1 Installation location preparation

8.1.1 Installation location preparation - vehicle with control unit

Removing horn and control unit

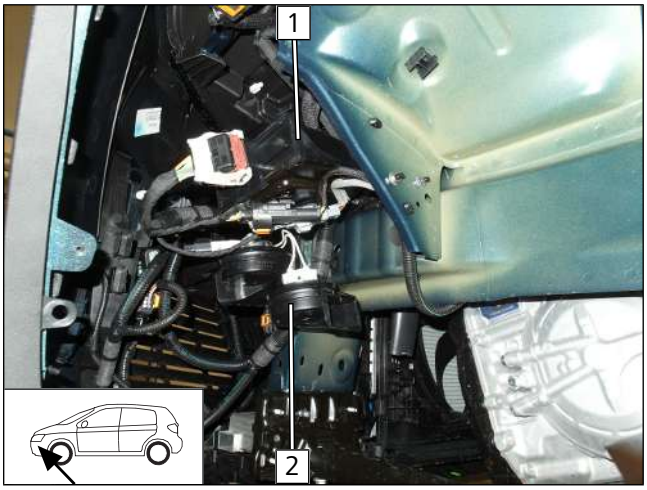


Fig. 17

[1] Control unit with bracket

[2] Horns [2x] with bracket, original vehicle nut is reused

Turning horn

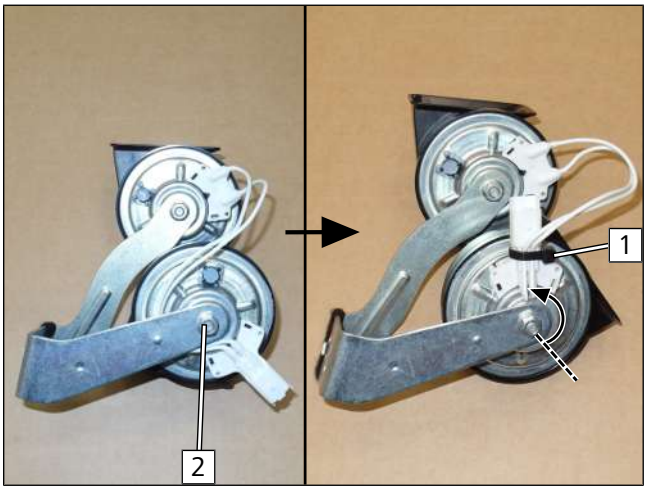


Fig. 18

▶ Unscrew the horn at position [2] and turn it and screw it back on as shown.

▶ Secure the line using cable tie [1].

Adapting control unit bracket

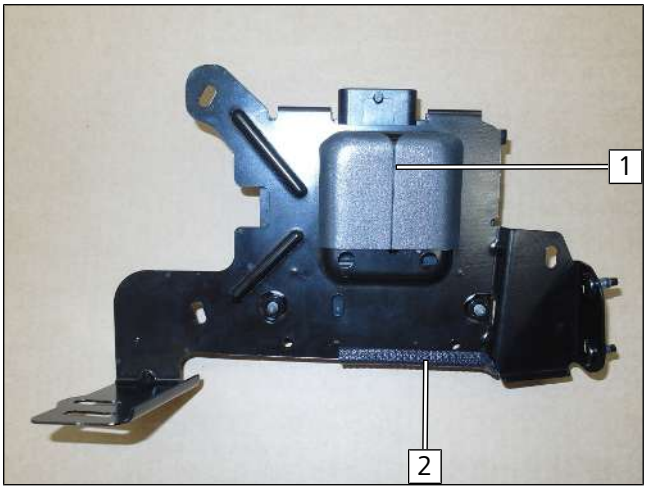


Fig. 19

▶ Cut the foam strip [1] in half and glue them as shown.

[2] 100mm edge protection

Mounting control unit

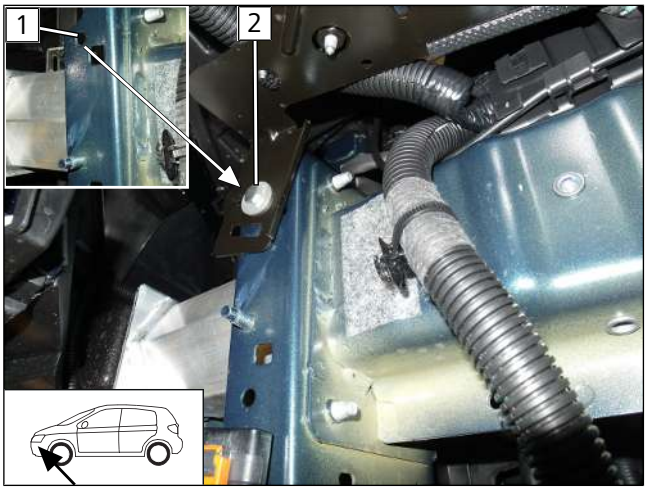


Fig. 20

▶ Insert the control unit with bracket and align it with new position 1 as shown.

1 Fastening point for control unit bracket

2 M6x20 bolt, large diameter washer, control unit bracket, original vehicle hole, flanged nut

Installing horns

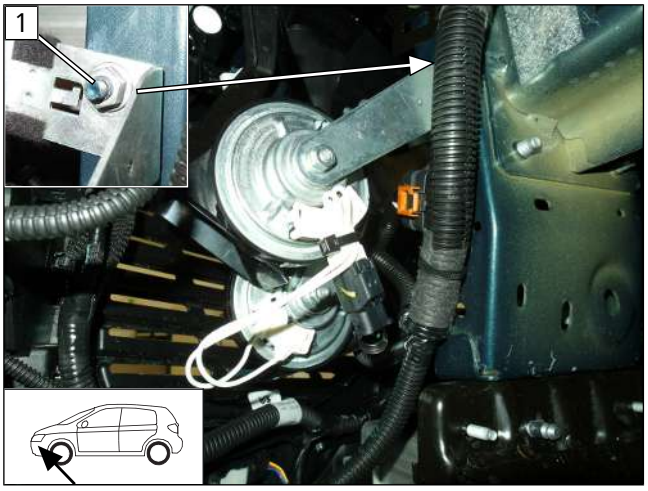


Fig. 21

1 Original vehicle stud bolt, horn bracket, original vehicle nut

Fastening wiring harness

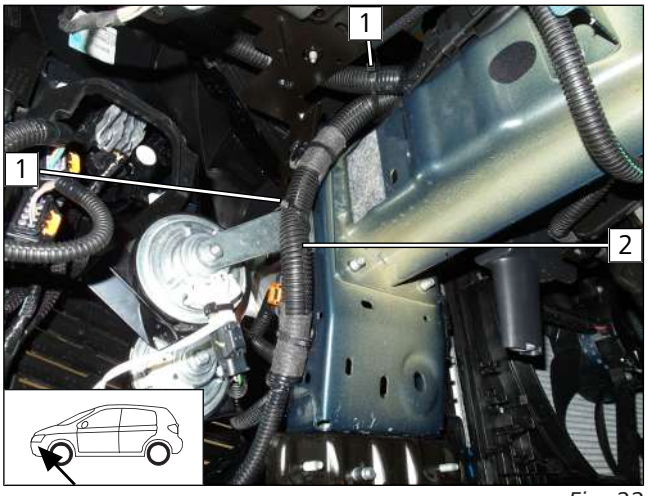


Fig. 22

▶ Route and fasten original vehicle wiring harness 2 as shown.

1 Cable tie

8.1.2 Installation location preparation - vehicle with relay

Removing horn

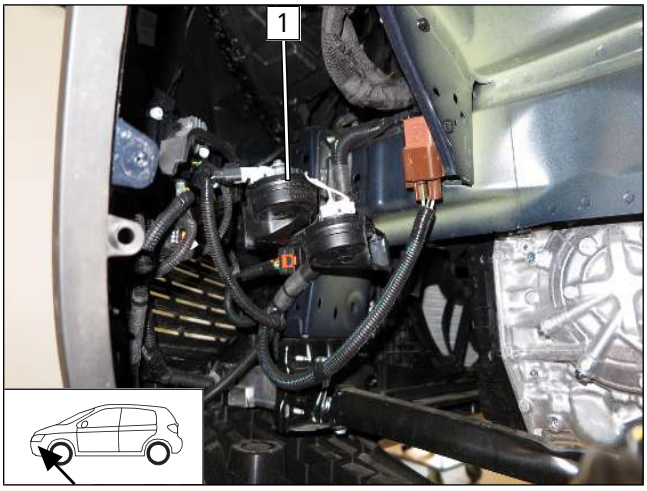


Fig. 23

1 Horns [2x] with bracket, original vehicle nut is reused

Turning horn

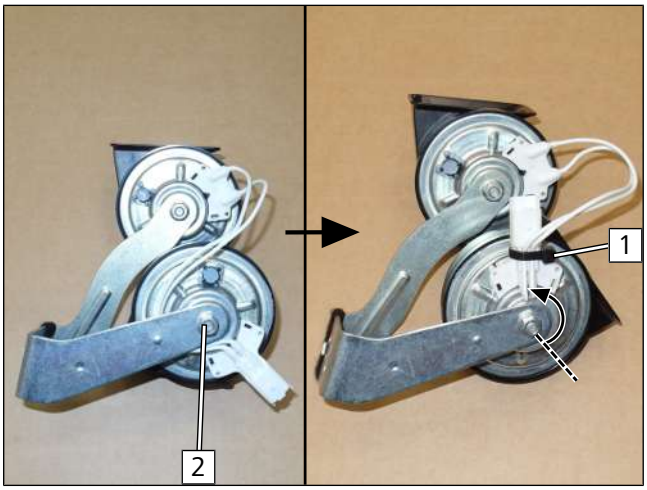


Fig. 24

- ▶ Unscrew the horn at position **2** and turn it and screw it back on as shown.
- ▶ Secure the line using cable tie **1**.

Mounting horn

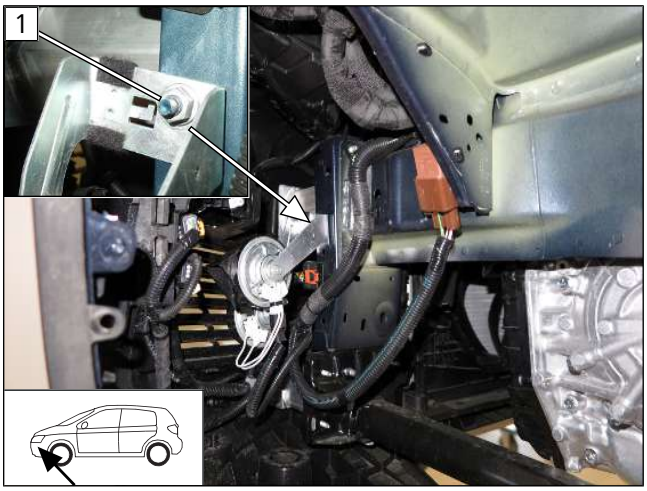


Fig. 25

1 Original vehicle stud bolt, horn bracket, original vehicle nut

Unclipping relay and wiring harness

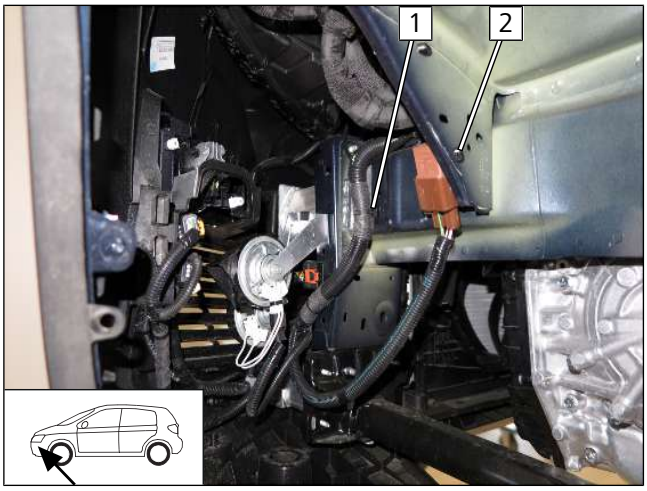


Fig. 26

▶ Unclip original vehicle wiring harness at position 1 and relay at position 2. Discard the clips.

Cutting foam in half

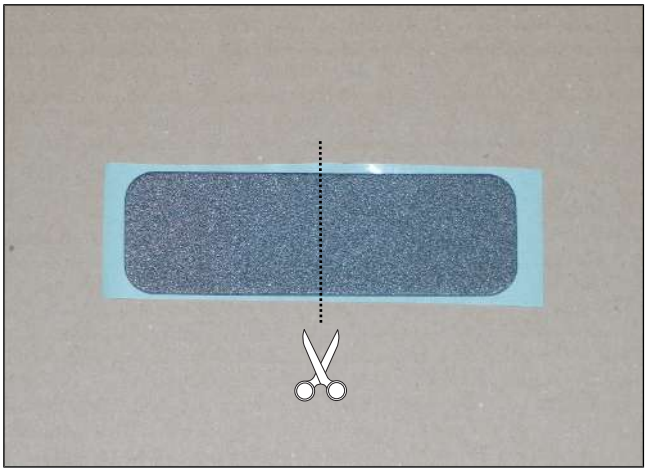


Fig. 27

Gluing foam

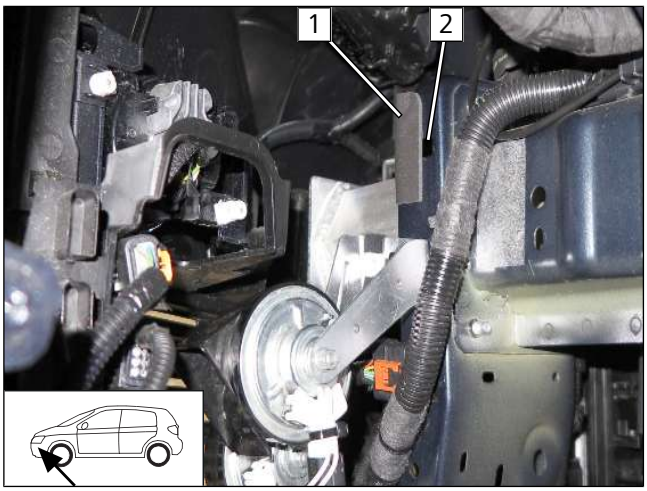


Fig. 28

▶ Glue half of the foam 1 as shown. Leave rectangular recess 2 free.

Fastening relay and wiring harness

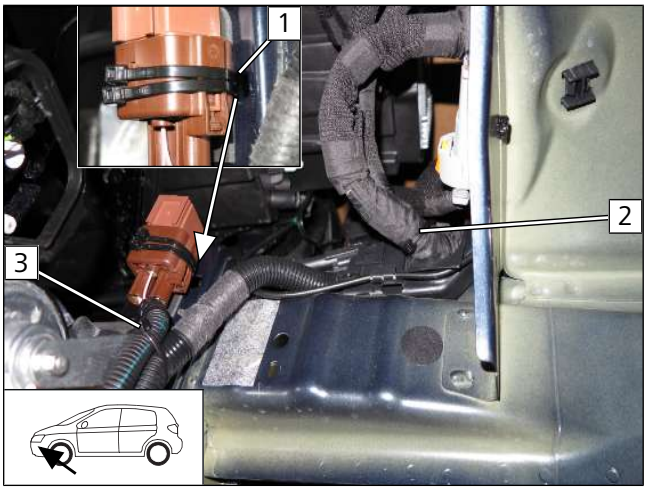


Fig. 29

- ▶ Fasten the relay with two cable ties [1] through the rectangular recess.
- ▶ Bend original vehicle wiring harness upwards and attach using cable tie [2] as shown.
- ▶ Fasten original vehicle wiring harnesses with cable tie [3] around the horn bracket.

8.1.3 Installation location preparation - all vehicles

Inserting rivet nut

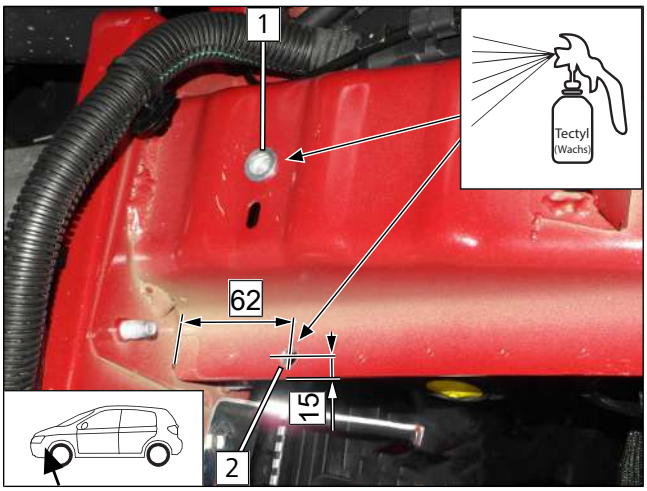


Fig. 30

[1] Drill out hole to Ø12.5, M8 rivet nut
[2] Ø7 hole for coolant pump

Preparing bracket

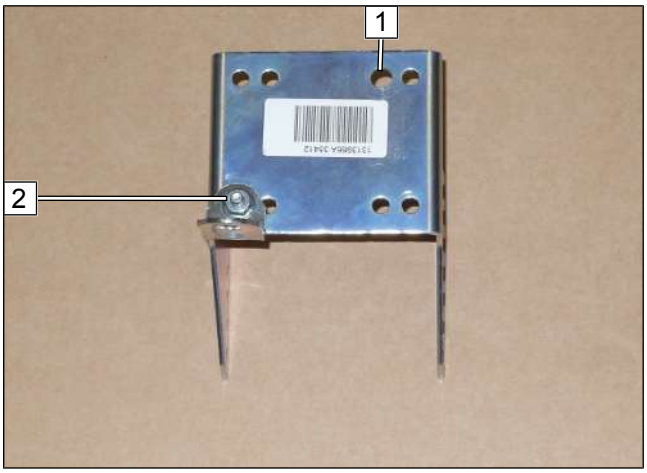


Fig. 31

[1] Drill hole to Ø8.5
[2] M6x16 bolt, bracket, angle bracket, flanged nut

Copying hole pattern

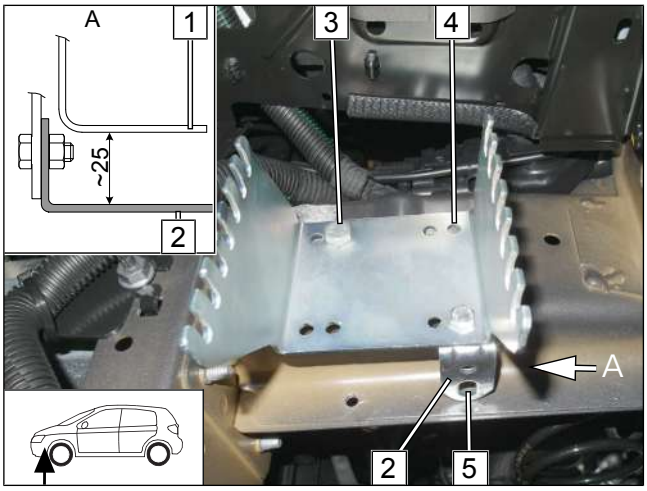


Fig. 32

▶ Align bracket as show in the figure.

1. Vehicle carrier
2. Angle bracket premounted
3. M8x25 bolt
4. Copying hole pattern
5. Copying hole pattern

Drilling hole, inserting rivet nut

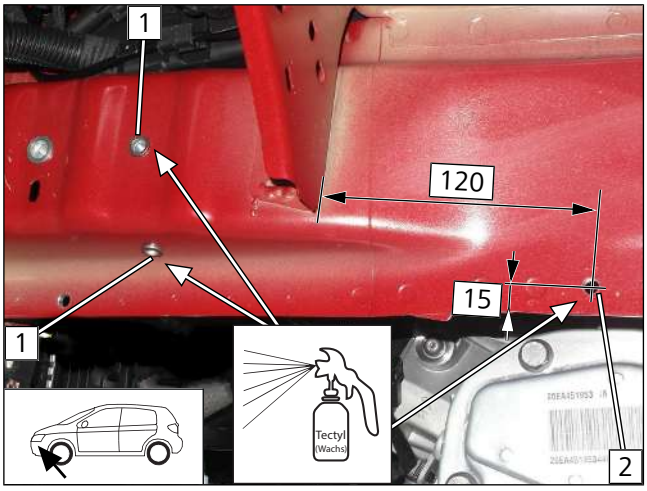


Fig. 33

1. Ø9 hole, M6 rivet nut
2. Ø7 hole

Preparing perforated bracket

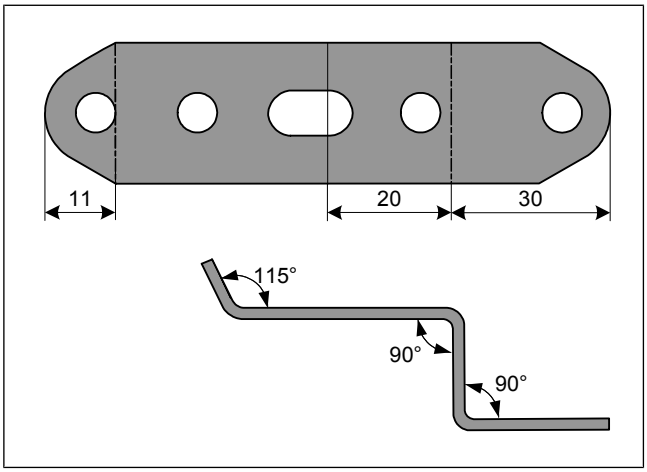


Fig. 34

Preparing exhaust silencer

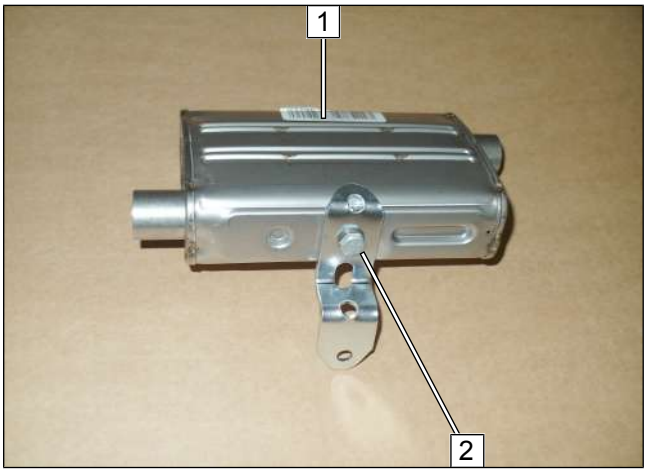


Fig. 35

1 Exhaust silencer
2 M6x16 bolt, spring lockwasher, perforated bracket

Mounting exhaust silencer

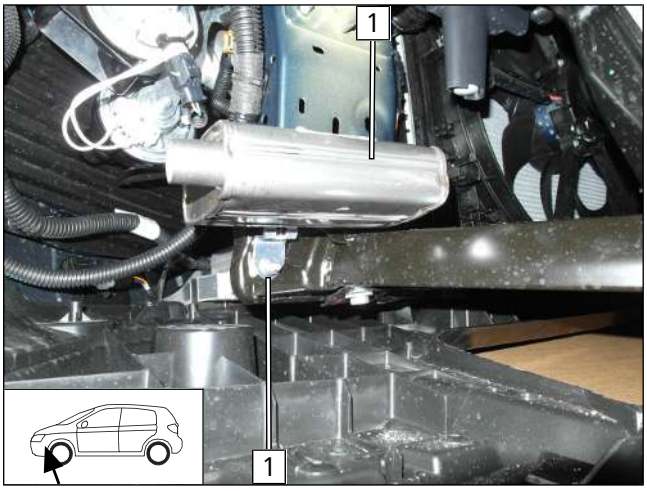


Fig. 36

1 Exhaust silencer
2 Original vehicle bolt, flanged nut

Mounting coolant pump

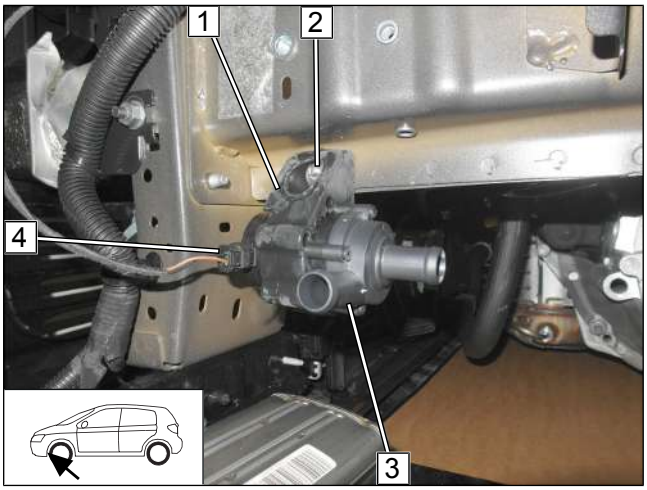


Fig. 37

1 Coolant pump mount
2 M6x25 bolt, flanged nut
3 Coolant pump
4 Coolant pump wiring harness connector

Mounting bracket

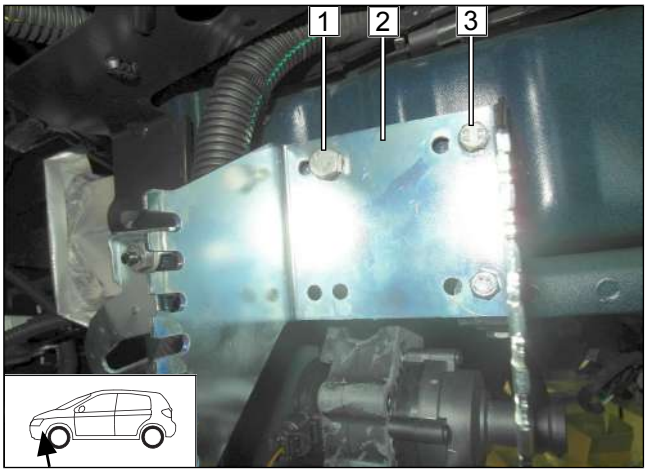


Fig. 38

1 M8x25 bolt, spring lockwasher, 5 spacers pre-mounted loosely

2 Bracket

3 M6x25 bolt, spring lockwasher, 5 spacers pre-mounted loosely

Mounting bracket

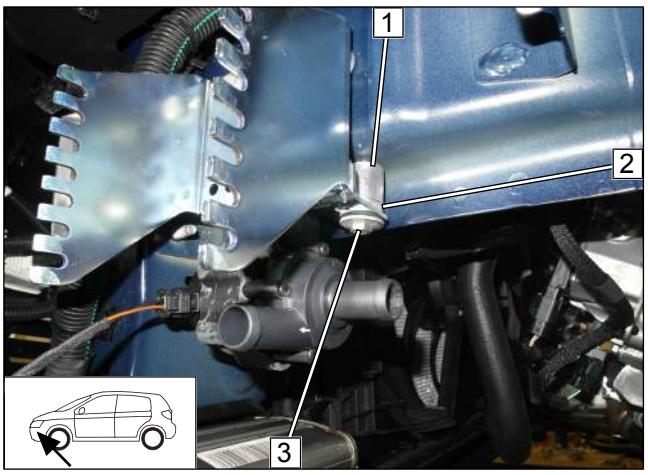


Fig. 39

▶ Align bracket and tighten all premounted bracket bolts.

1 20 spacer

2 5 spacer

3 M6x40 bolt, spring lockwasher, large diameter washer

8.2 Premounting heater

Mounting water connection piece

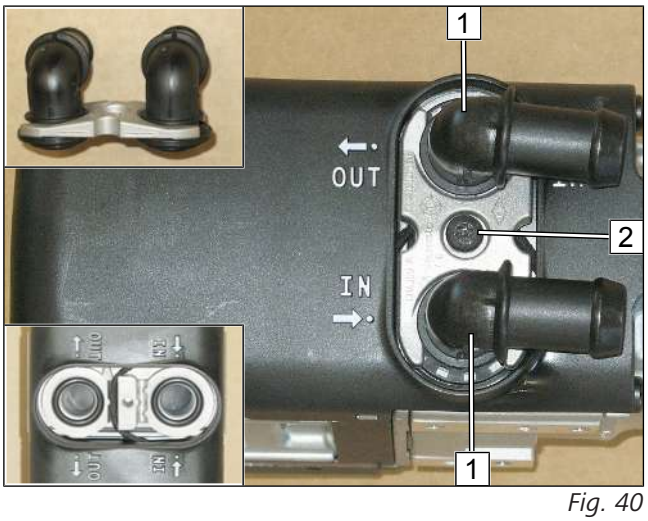


Fig. 40

Observe the general installation instructions of the heater.

1 Water connection piece, sealing ring

2 5x15 self-tapping bolt, water connection piece retaining plate

Premounting bolts

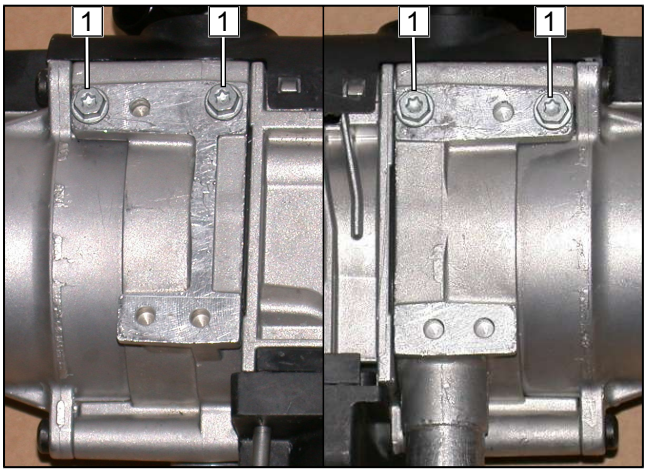


Fig. 41

▶ Screw 5x13 self-tapping bolt 1 in available holes by a max. of 3 thread turns.

Cutting hoses to length

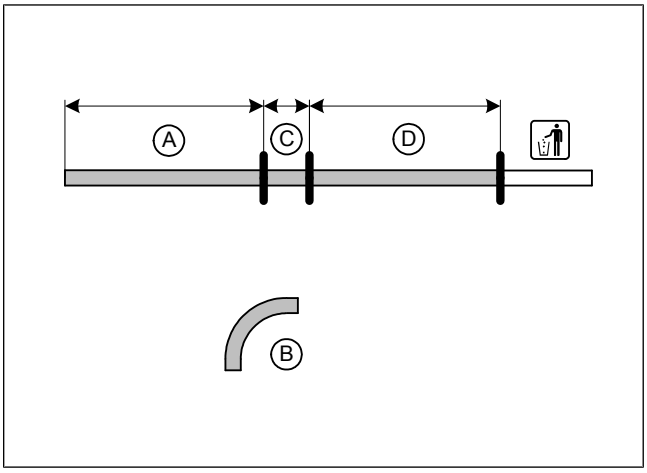


Fig. 42

	1.6B	2.0D
Ⓐ	830	830
Ⓑ	90°, Ø18	90°, Ø18
Ⓒ	70	70
Ⓓ	900	880

Preparing hoses

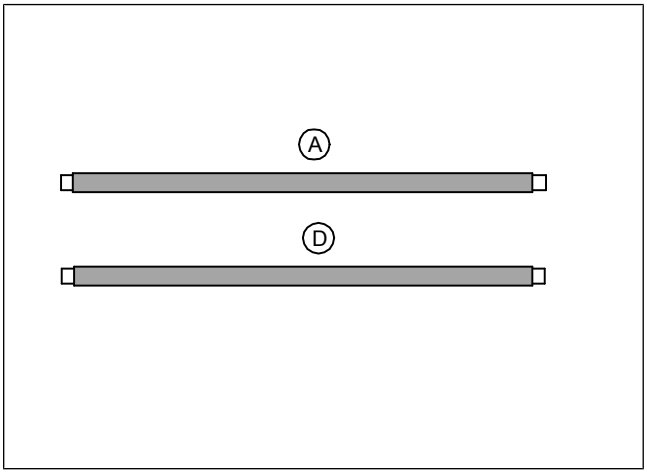


Fig. 43

▶ Slide fabric heat shrink tubing onto hoses Ⓐ and Ⓓ, cut to length and shrink.

Premouting hoses

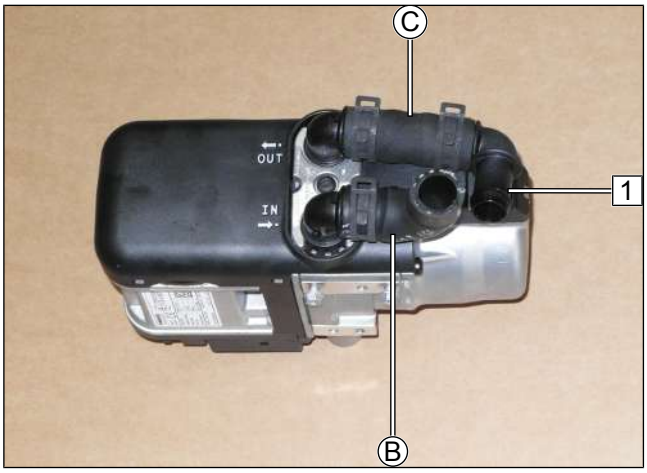


Fig. 44

▶ All spring clips, Ø25

1 Ø18x18 / 90° connecting pipe

Mounting combustion air and fuel line

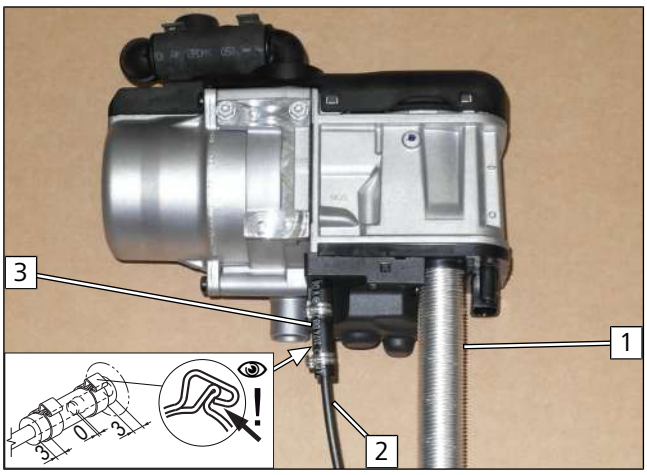


Fig. 45

1 Combustion air pipe

2 Fuel line

3 Hose section, Ø10 clamp [2x]

8.3 Heater mounting

Heater mounting

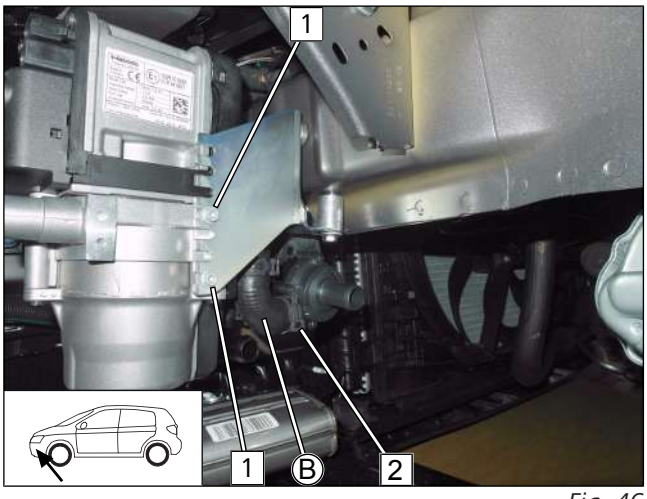


Fig. 46

Observe the general installation instructions of the heater.

▶ Tighten 5x13 self-tapping bolt 1.

▶ Slide hose B onto the coolant pump output and fasten with Ø25 spring clip 2.

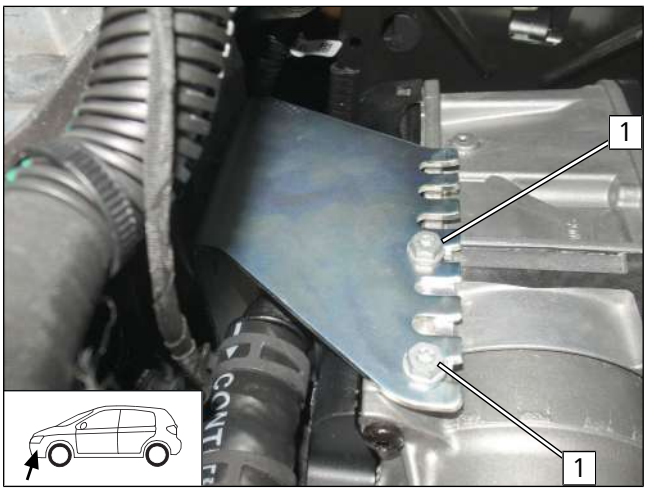


Fig. 47

▶ Tighten 5x13 self-tapping bolt 1.

Mounting wiring harnesses

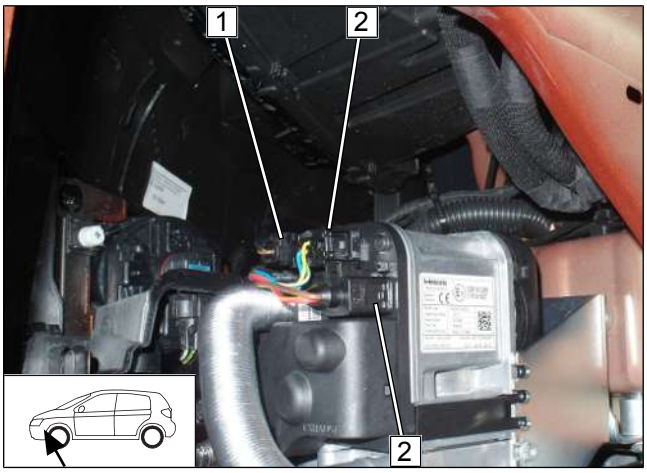


Fig. 48

1 Coolant pump wiring harness connector
2 Heater wiring harness connector

9 Fuel

DANGER

Risk of fire and explosion due to leaking fuel and escaping fuel vapours.

The incorrect installation of the fuel extractor can cause damage and fire.

- ▶ Avoid electrostatic discharges and open fire
- ▶ When working on the fuel system, ensure sufficient ventilation and bleeding
- ▶ Open the fuel tank cap of the vehicle
- ▶ Ventilate the fuel tank
- ▶ Re-close the tank lock
- ▶ Catch any fuel running off with an appropriate container

Danger of damage to components

- ▶ Install fuel line and fuel pump wiring harness so that they are protected against stone impact
- ▶ Provide rub protection for fuel line and wiring harness in areas where there are sharp edges

Dismantling fuel pump connector X7

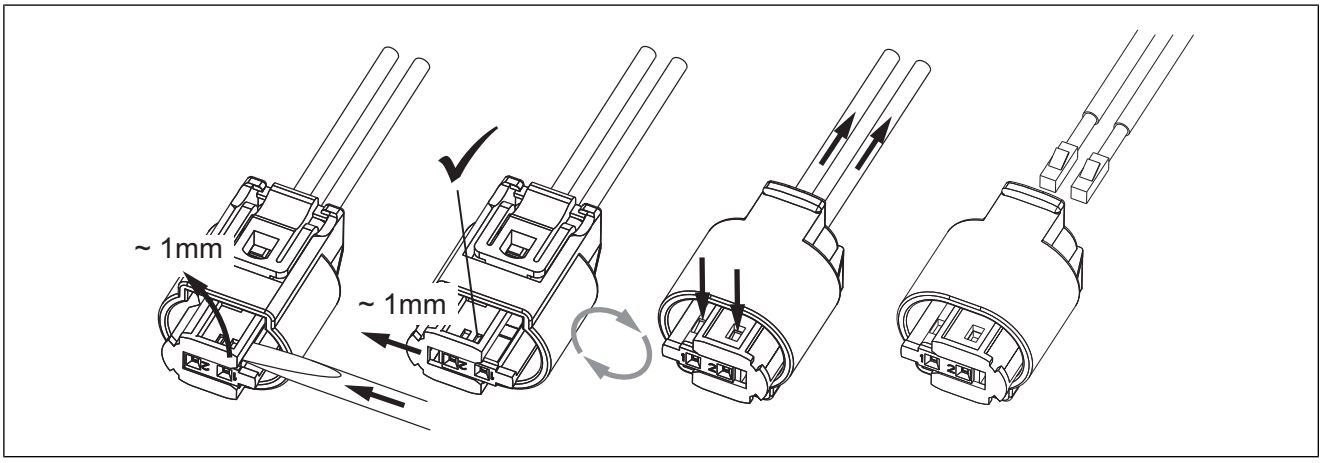


Fig. 49

9.1 Routing fuel line

Connection to heater

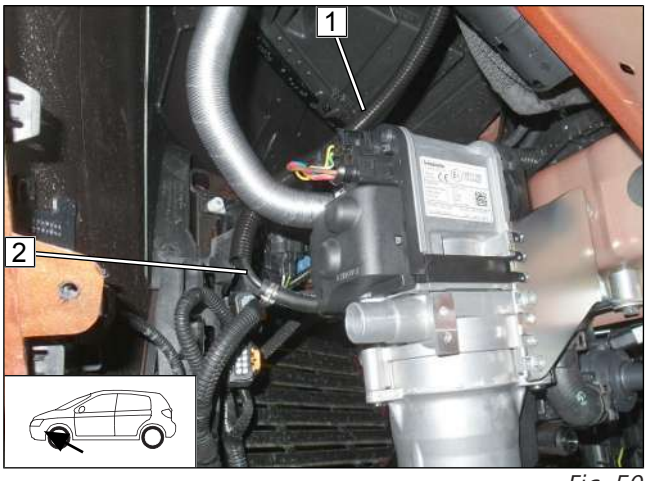


Fig. 50

- ▶ Draw fuel line and fuel pump wiring harness 2 into Ø10 corrugated tube 1 and route into the engine compartment.

Routing in engine compartment

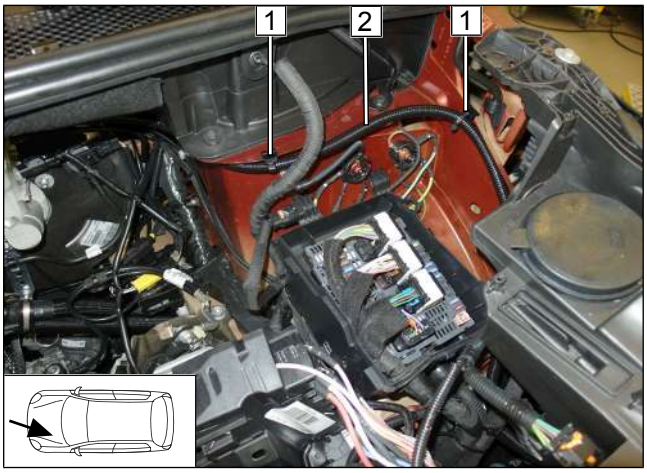


Fig. 51

1 Edge clip cable tie

2 Fuel line and fuel pump wiring harness in corrugated tube

Routing in engine compartment

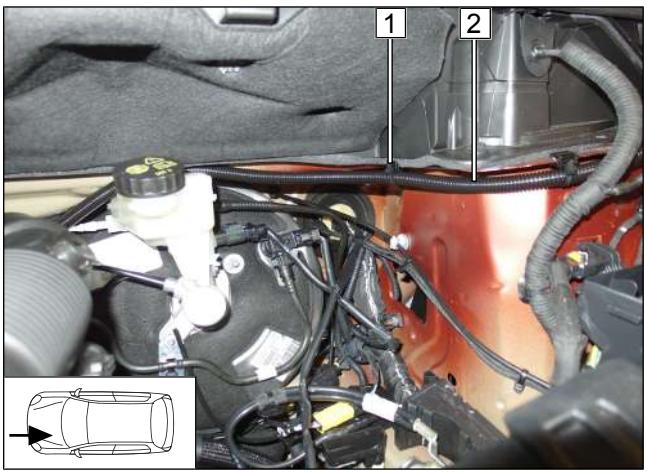


Fig. 52

1 Edge clip cable tie

2 Fuel line and fuel pump wiring harness in corrugated tube

Routing in engine compartment

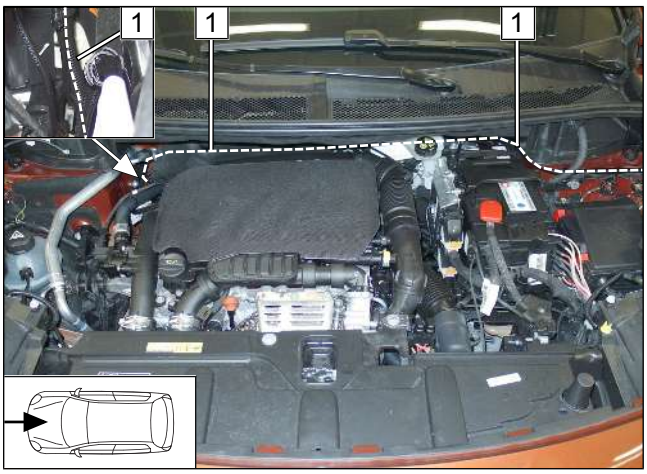


Fig. 53

▶ Route fuel line and fuel pump wiring harness in corrugated tube 1 behind the insulation mat to the right side of the vehicle and further to the underbody.

Routing on underbody

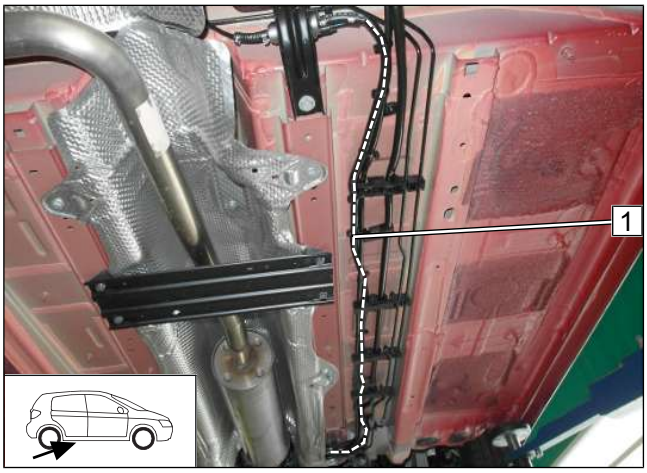


Fig. 54

▶ Route fuel line and fuel pump wiring harness **1** on underbody along original vehicle fuel line to DP installation location.

Bending perforated bracket at an angle

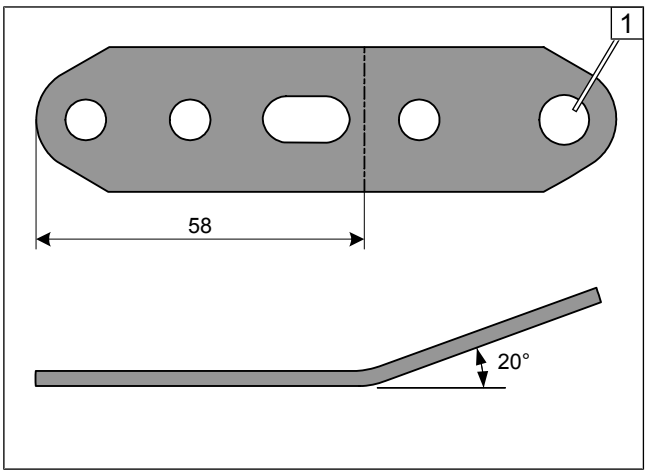


Fig. 55

1 Enlarge hole to Ø8.5

Premounting fuel pump

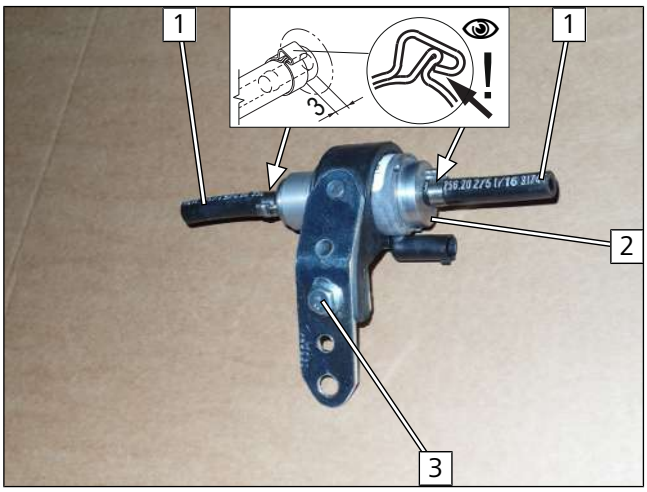


Fig. 56

1 Hose section, Ø10 clamp

2 DP

3 M6x25 bolt, perforated bracket, DP mount, support angle bracket, flanged nut

Mounting fuel pump

Fig. 57

1 DP premounted
2 Original vehicle bolt

Assembling fuel pump connector X7

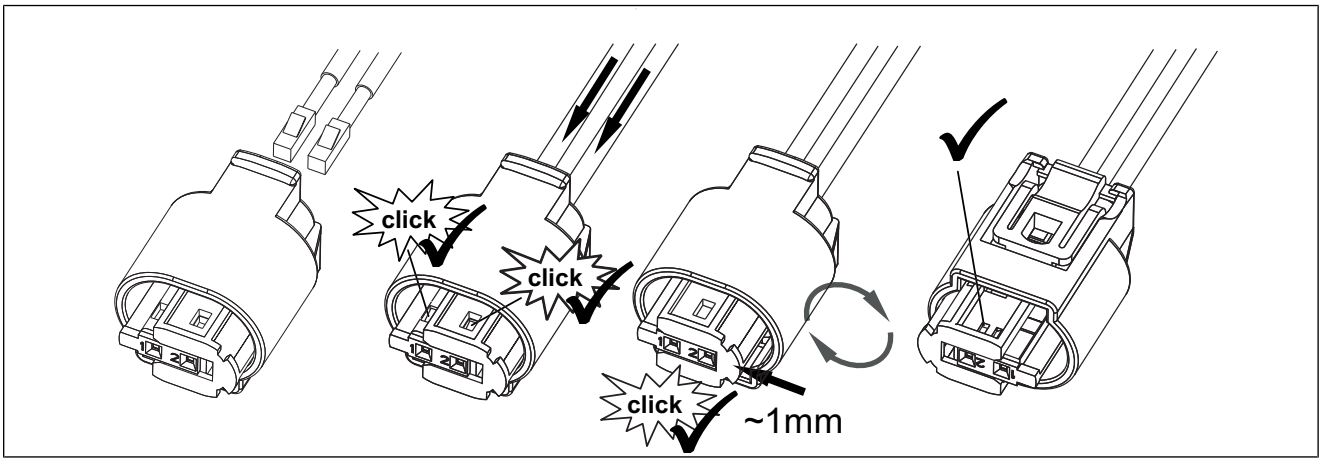


Fig. 58

Fuel pump connection

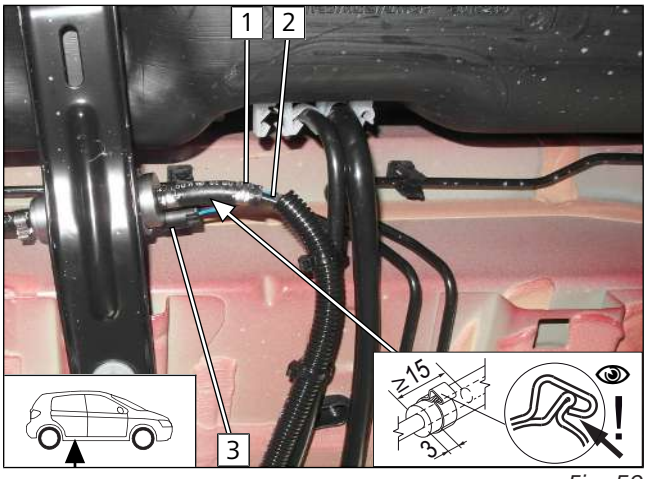


Fig. 59

1 Ø10 clamp
2 Heater fuel line
3 DP wiring harness, X7 connector mounted

Loosening rear seat

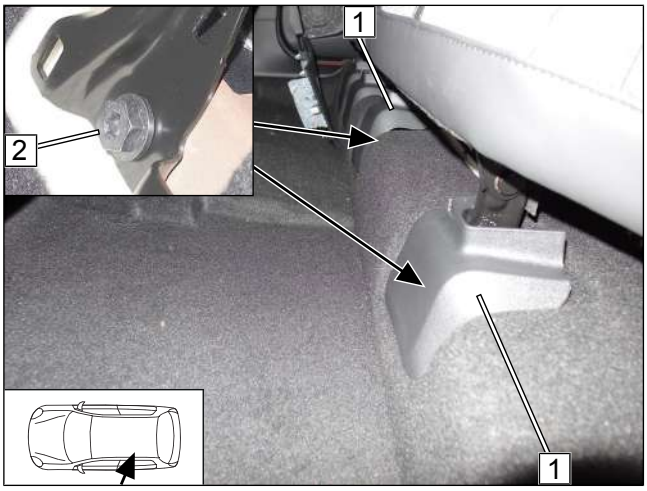


Fig. 60

1 Cap
2 Remove [2x] original vehicle bolts

Uncovering service lid

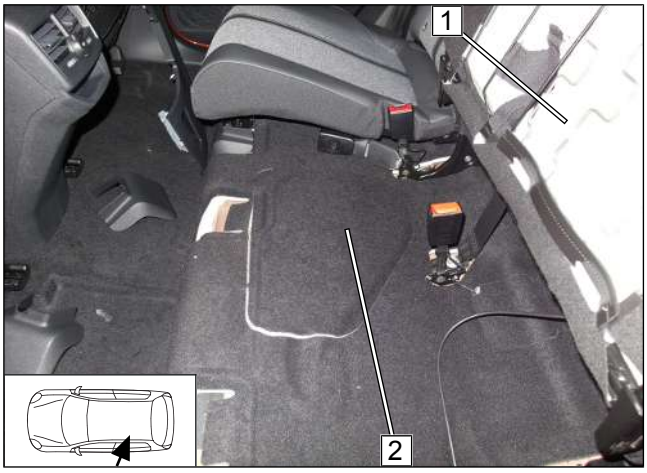


Fig. 61

1 Fold up rear seat
2 Open insulation mat

9.2 FuelFix installation for petrol vehicles

Preparing drilling template

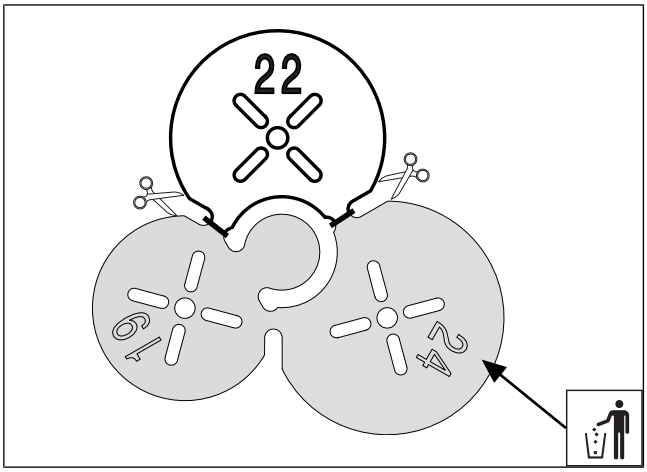


Fig. 62

Copying hole pattern

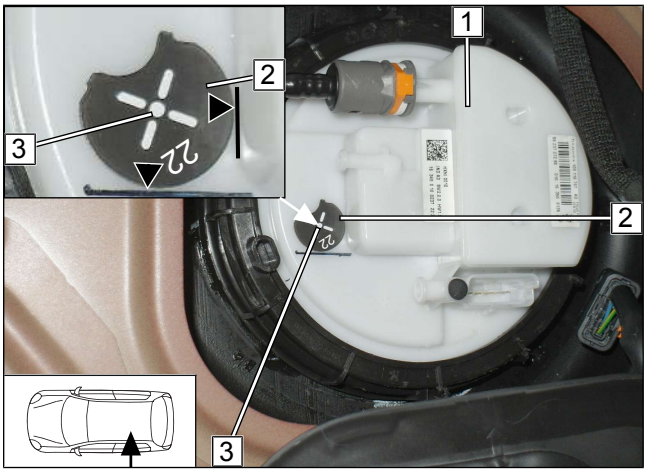


Fig. 63

Observe the installation instructions of the tank extracting device.

▶ Work steps F1, F2

1 Tank fitting
2 Position Ø22 drilling template as shown
3 Hole pattern

Hole for FuelFix

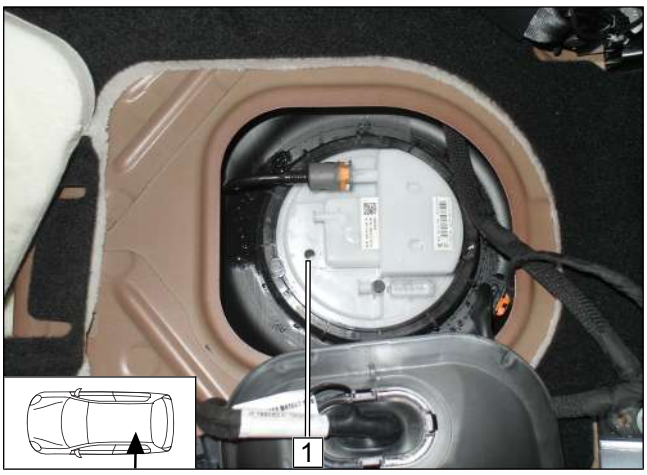


Fig. 64

DANGER

Risk of fire and explosion due to leaking fuel and escaping fuel vapours

▶ Work step F3

1 Hole made with provided drill

Inserting FuelFix

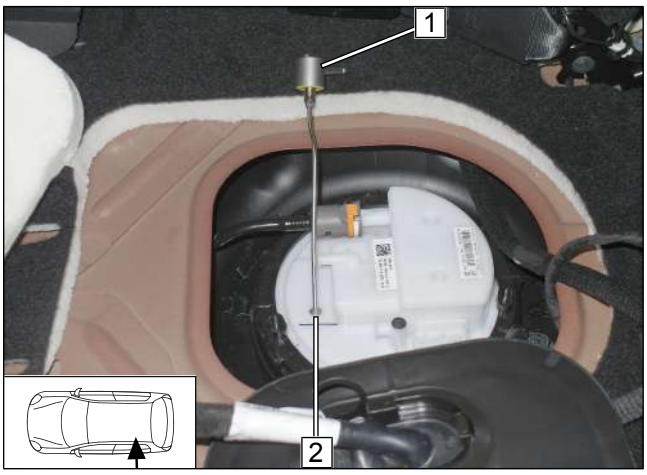


Fig. 65

▶ Work steps F4, F5

▶ Bend FuelFix 1 as shown in template and cut to length. Insert in hole 2.

Fig. 66

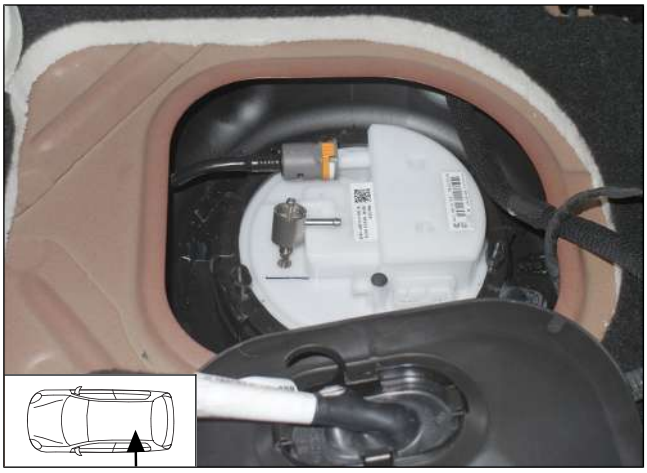


Fig. 67

Aligning FuelFix

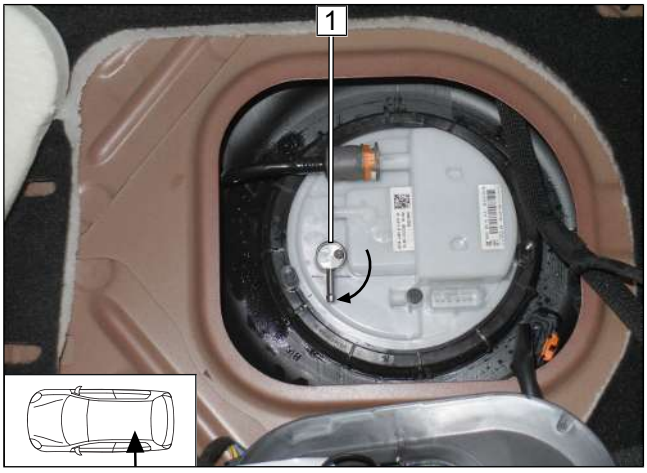


Fig. 68

- ▶ Work steps F5.3, F5.4
- ▶ Align FuelFix 1 as shown.

Connecting fuel line

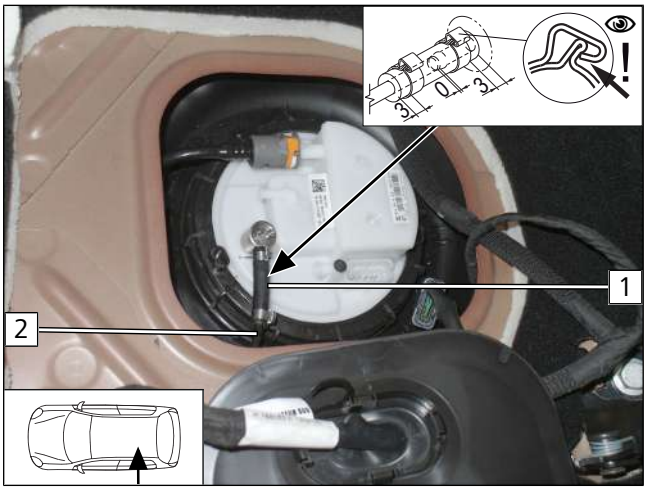


Fig. 69

▶ Work step F6

1 Hose section, Ø10 clamp [2x]

2 Fuel line

Mounting FuelFix

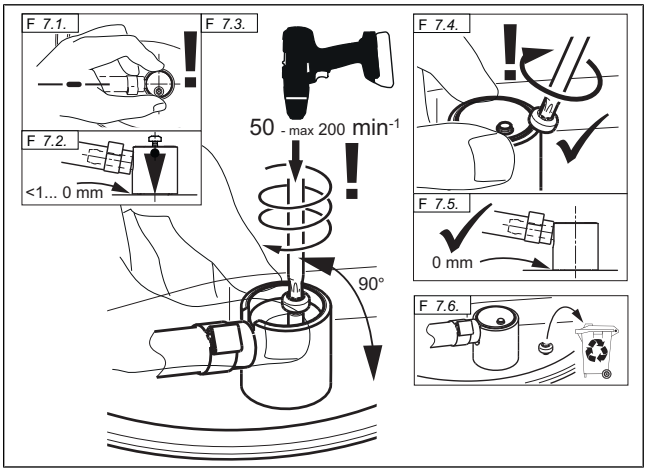


Fig. 70

DANGER

Risk of fire and explosion due to leaking fuel and escaping fuel vapours

▶ Work step F7

Checking firm seating of FuelFix

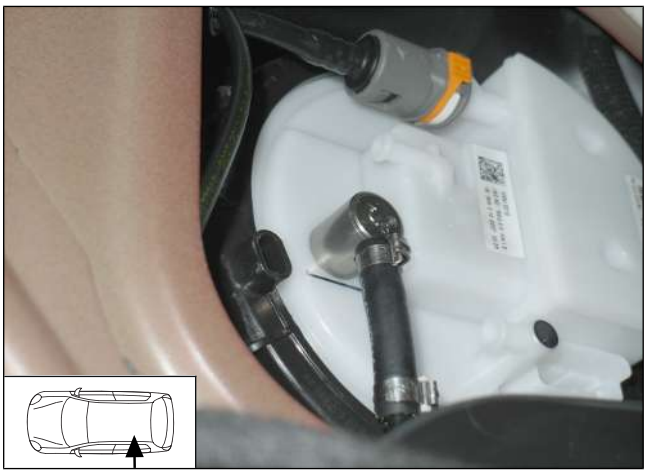


Fig. 71

▶ Work step F8

Securing fuel line

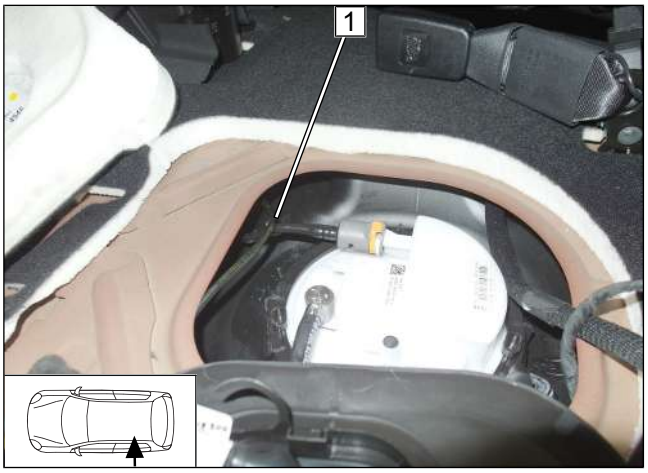


Fig. 72

1 Cable tie for tension relief

9.3 FuelFix installation for diesel vehicles

Preparing drilling template

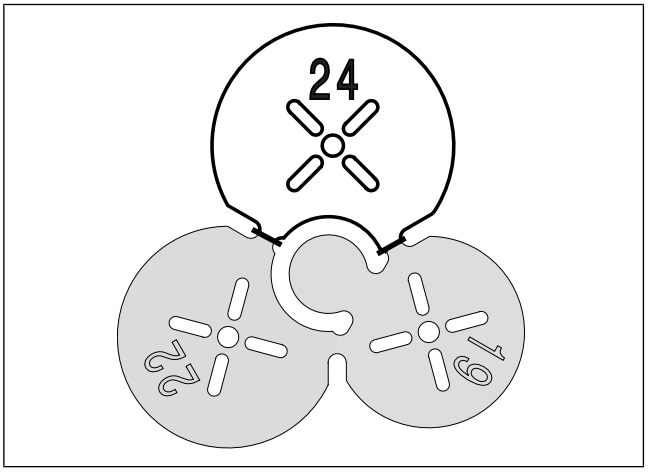


Fig. 73

▶ Bend Ø19 and Ø22 up 90°.

Copying hole pattern

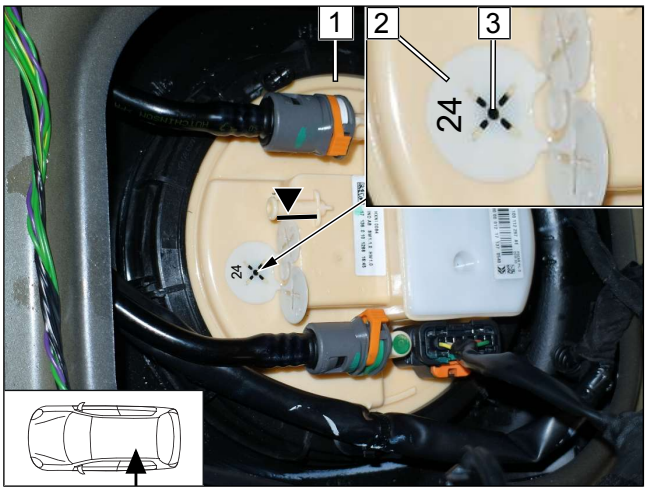


Fig. 74

Observe the installation instructions of the tank extracting device.

▶ Work steps F1, F2

1 Tank fitting
2 Position Ø24 drilling template as shown
3 Hole pattern

Hole for FuelFix

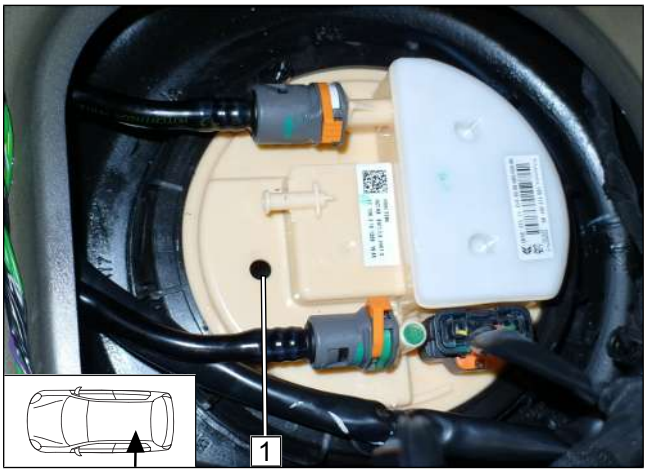


Fig. 75

DANGER

Risk of fire and explosion due to leaking fuel and escaping fuel vapours

▶ Work step F3

1 Hole made with provided drill

Inserting FuelFix

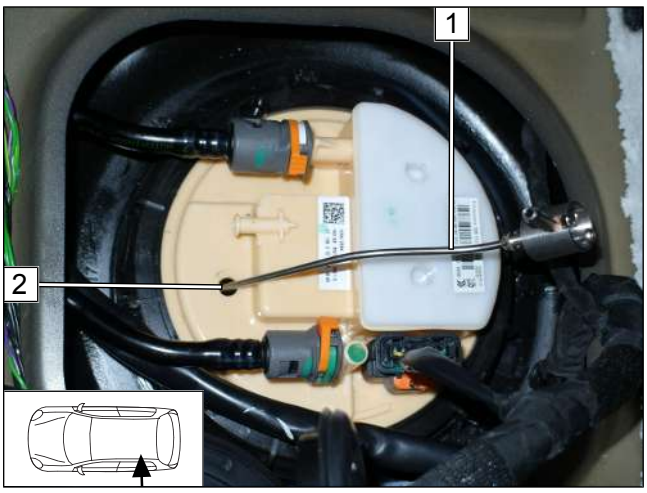


Fig. 76

▶ Work steps F4, F5

▶ Bend FuelFix 1 as shown in template and cut to length. Insert in hole 2.

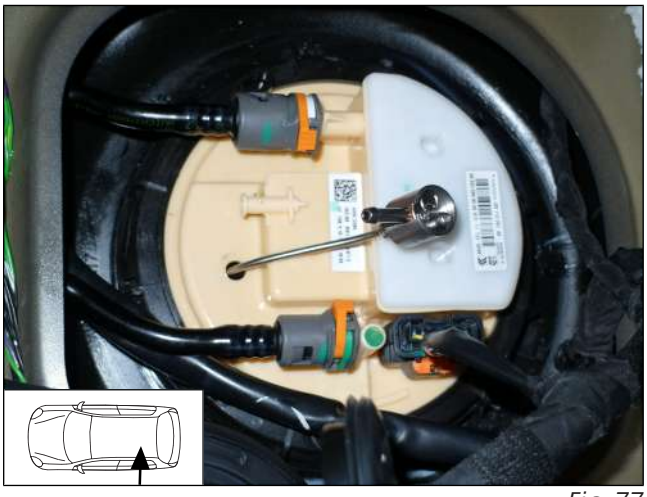


Fig. 77

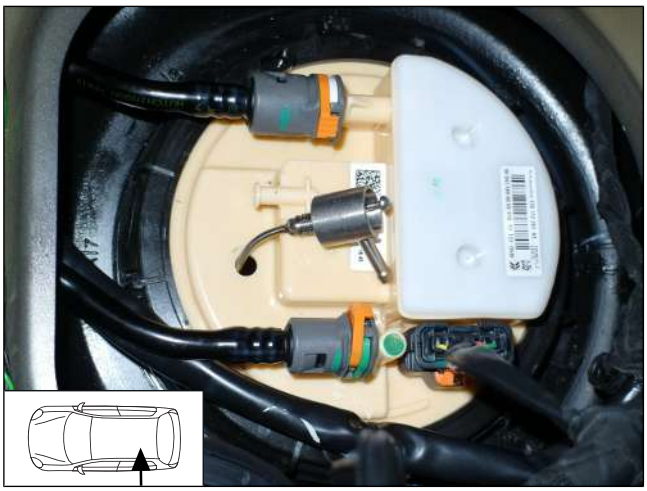


Fig. 78

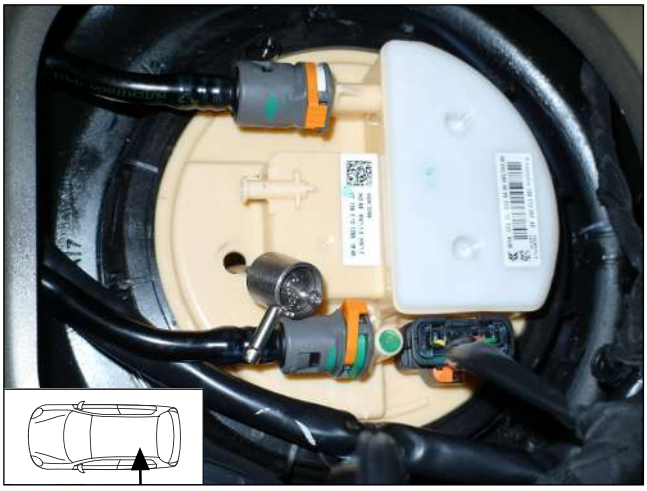


Fig. 79

Aligning FuelFix

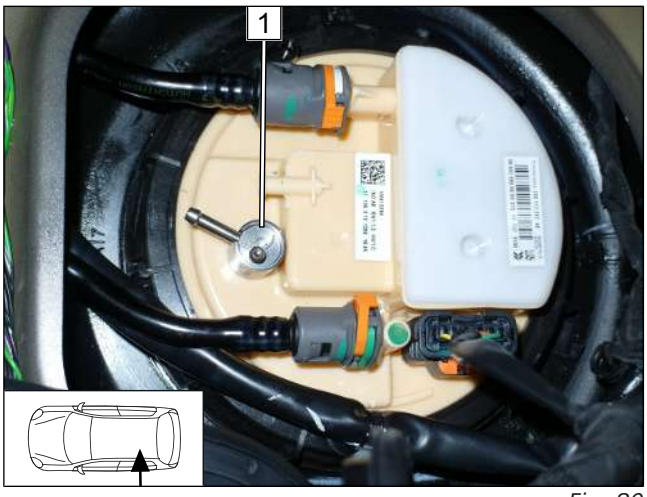


Fig. 80

- ▶ Work steps F5.3, F5.4
- ▶ Align FuelFix **1** as shown.

Connecting fuel line

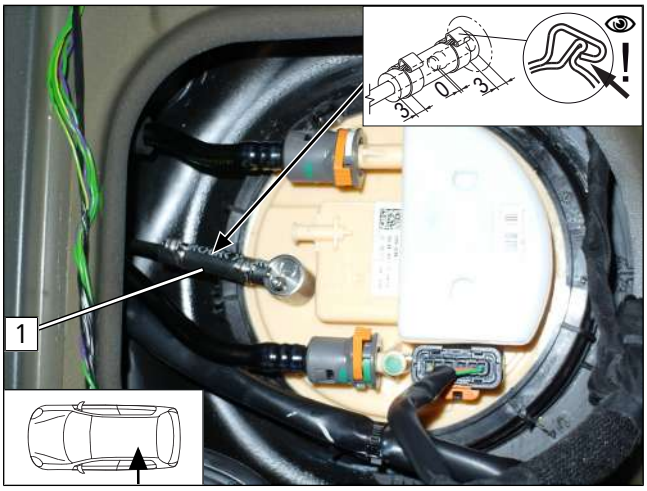


Fig. 81

▶ Work step F6

1 Hose section, Ø10 clamp [2x]

Mounting FuelFix

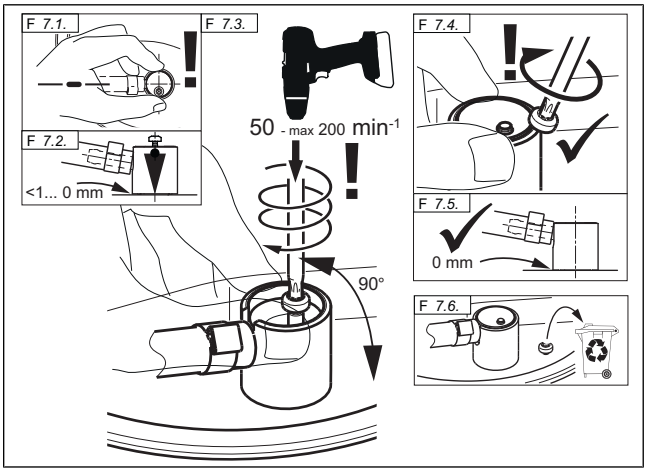


Fig. 82

DANGER

Risk of fire and explosion due to leaking fuel and escaping fuel vapours

▶ Work step F7

Checking firm seating of FuelFix

Fig. 83

▶ Work step F8

Securing fuel line

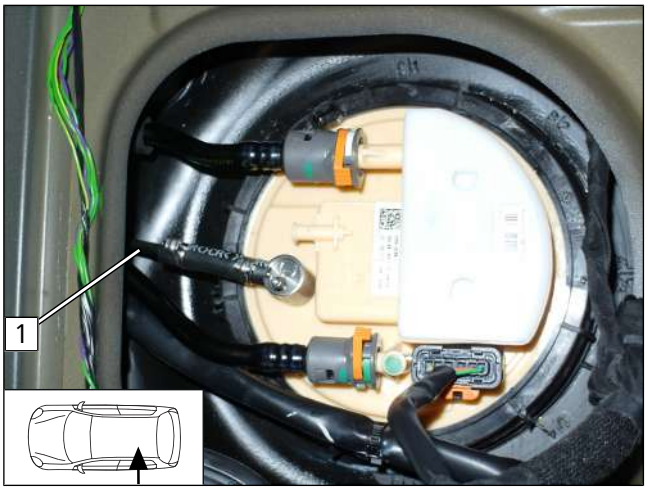


Fig. 84

▶ Attach fuel line 1 using a cable tie in a suitable location for tension relief.

9.4 Fuel pump connection

Connecting fuel line of FuelFix

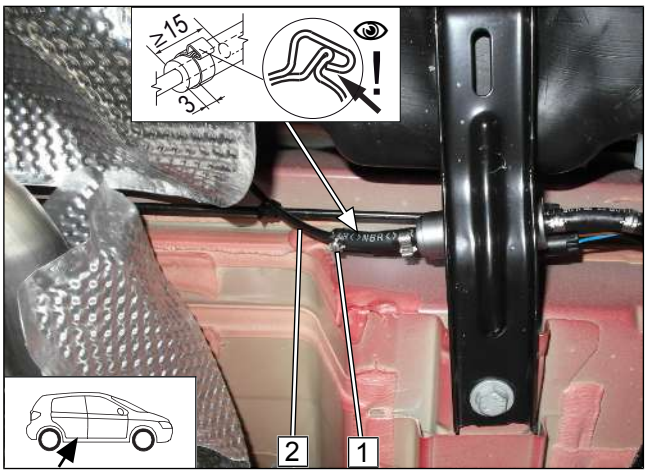


Fig. 85

Danger of damage to components

Attach corrugated tube to original vehicle lines using cable ties.

1 Ø10 clamp
2 Fuel line of FuelFix

10 Combustion air

Routing original vehicle wiring harness

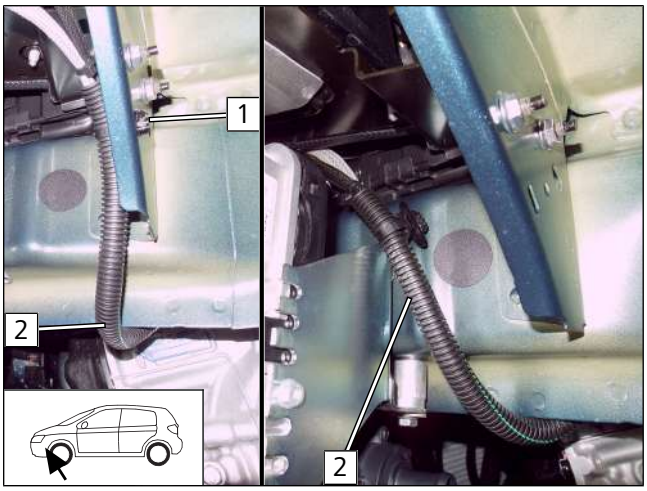


Fig. 86

Version 1

▶ Loosen clip-type cable tie [1], reroute original vehicle wiring harness [2] and fasten using cable ties.

Mounting combustion air intake silencer

Fig. 87

[1] Ø51 clamp, M5x16 bolt, original vehicle hole, nut

[2] Silencer

Detaching original vehicle connector

Fig. 88

Version 2

[1] Original vehicle connector

[2] Discard retaining clip

Fastening original vehicle connector

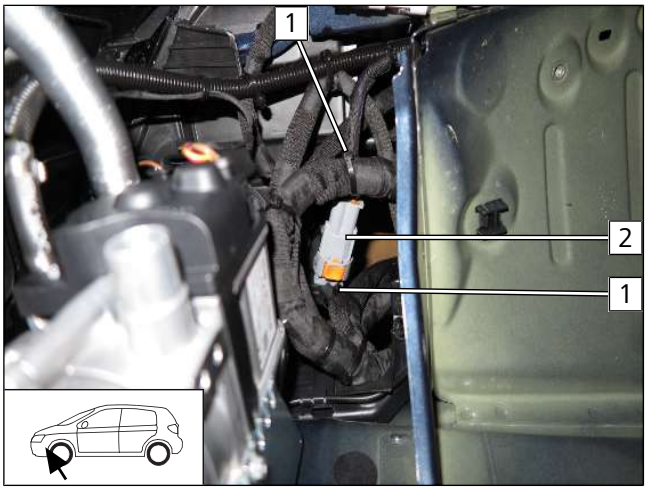


Fig. 89

1 Cable tie
2 Original vehicle connector

Mounting combustion air intake silencer

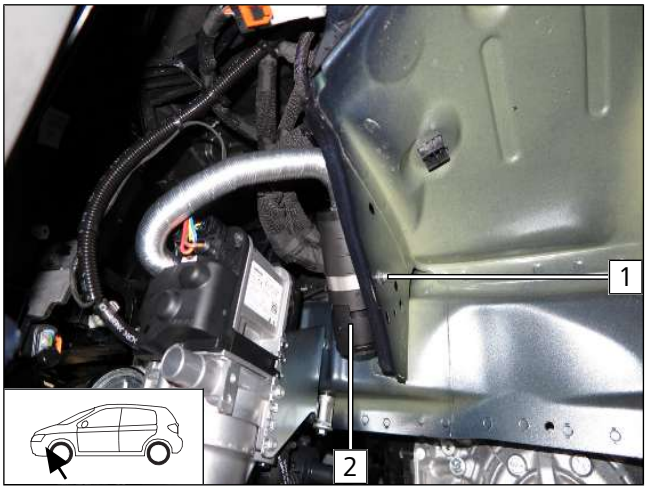


Fig. 90

1 Ø51 clamp, M5x16 bolt, original vehicle hole, nut
2 Silencer

11 Exhaust part 1

Preparing exhaust pipe

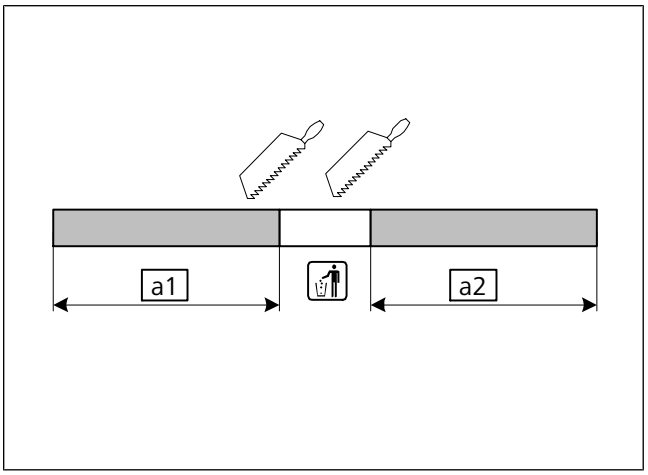


Fig. 91

a1 300
a2 260

Mounting exhaust pipe and ASH

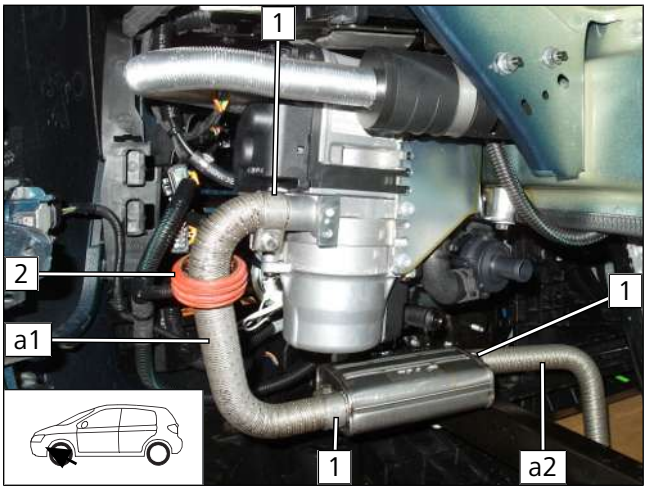


Fig. 92

1 Hose clamp
2 ASH

12 Coolant

12.1 Hose routing diagram

'Inline' coolant circuit

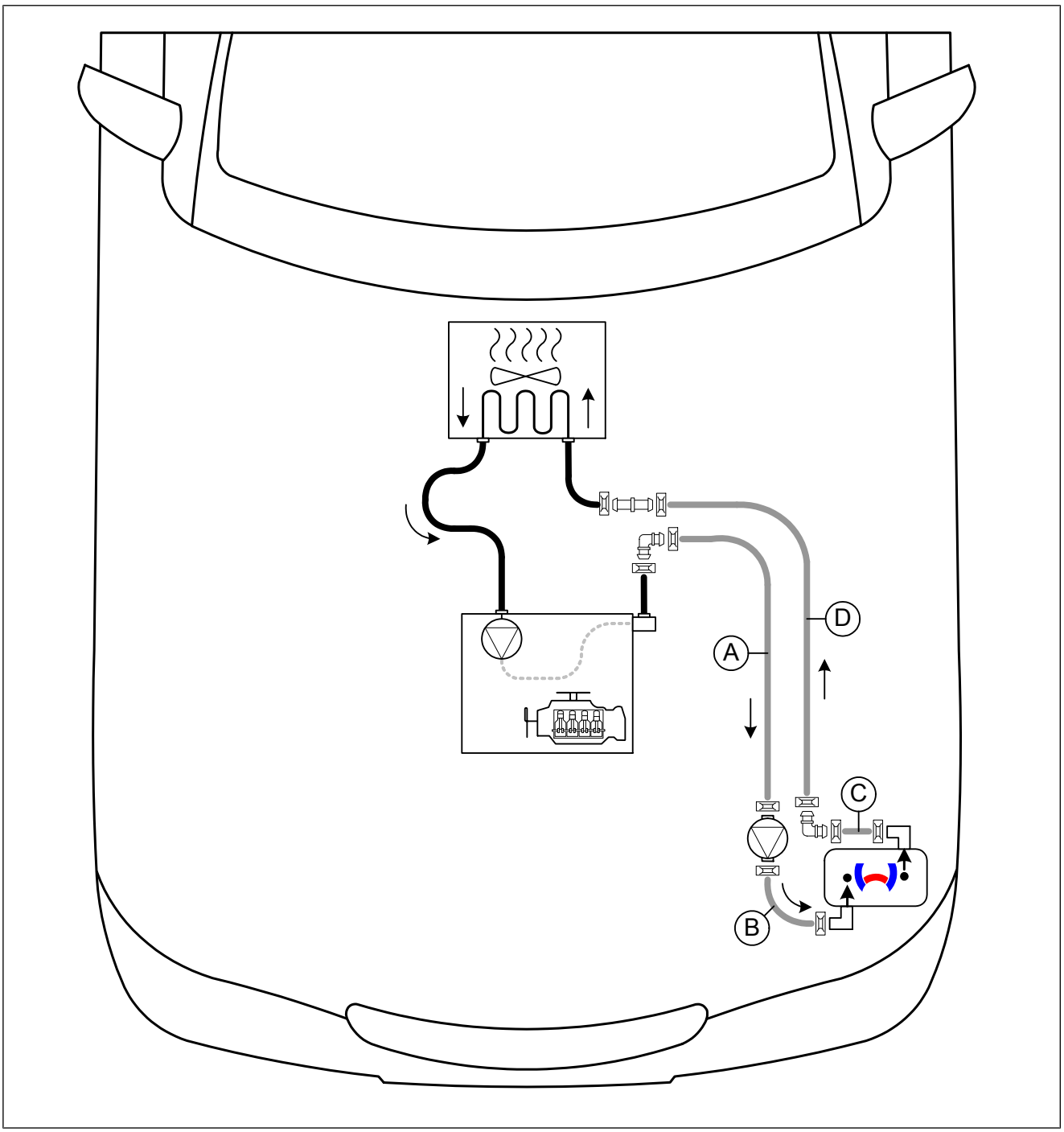


Fig. 93

All spring clips = Ø25

All connecting pipe or = Ø18x18

12.2 Coolant circuit installation

Preparing perforated bracket 1

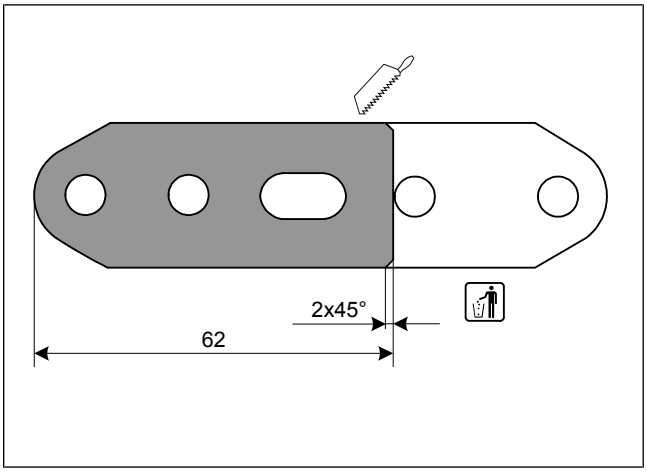


Fig. 94

Preparing perforated bracket 2

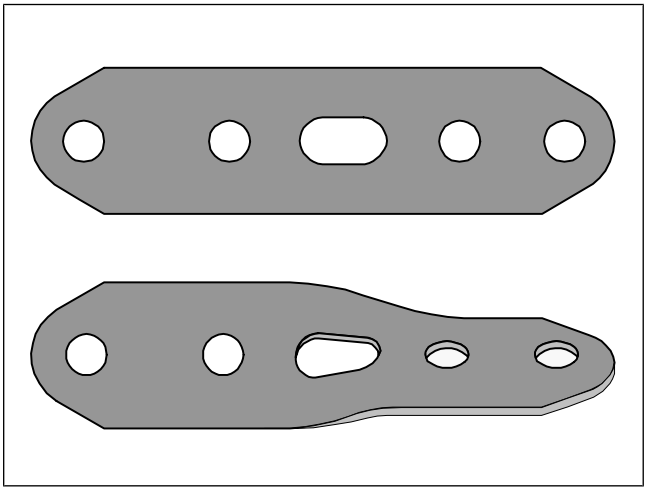


Fig. 95

▶ Twist perforated bracket 45°.

Premounting perforated bracket 2

Fig. 96

1 M6x20 bolt, perforated bracket 2, Ø38 rubber-coated p-clamp, lock washer

Mounting perforated bracket 1

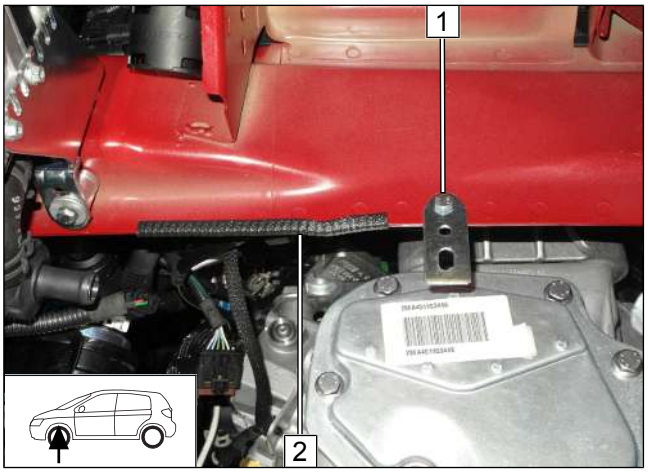


Fig. 97

1 M6x16 bolt, perforated bracket, flanged nut

2 200 long edge protection

Loosening original vehicle wiring harness

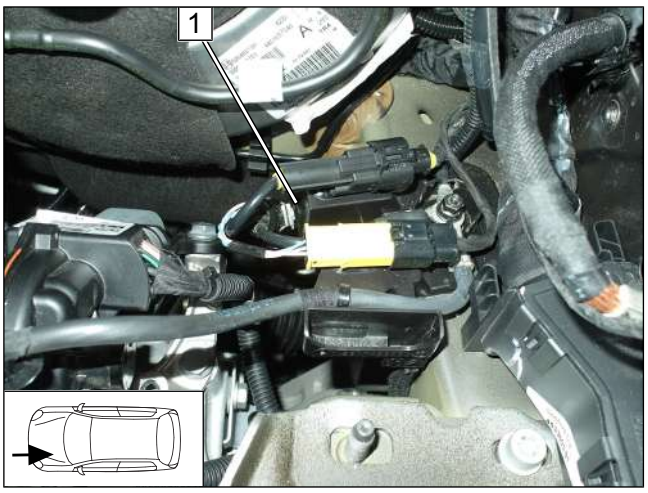


Fig. 98

▶ Disconnect original vehicle wiring harness 1, it will be fastened later.

Turning earth cable

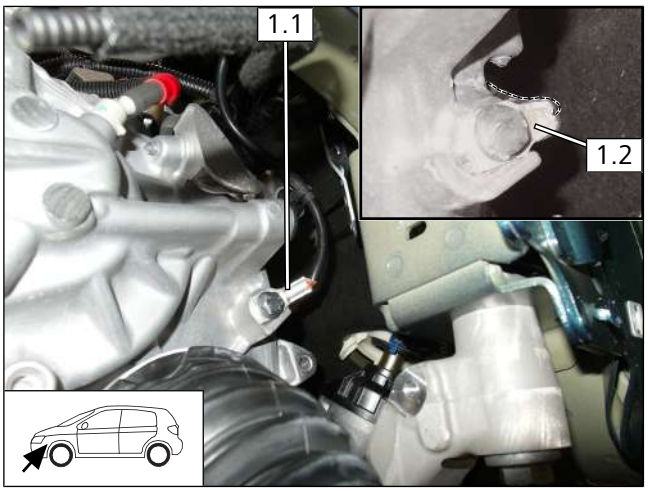


Fig. 99

Except 8-speed AG

1.1 Unscrew earth cable

1.2 Turn earth cable 180° and screw it back on

Mounting perforated bracket 2

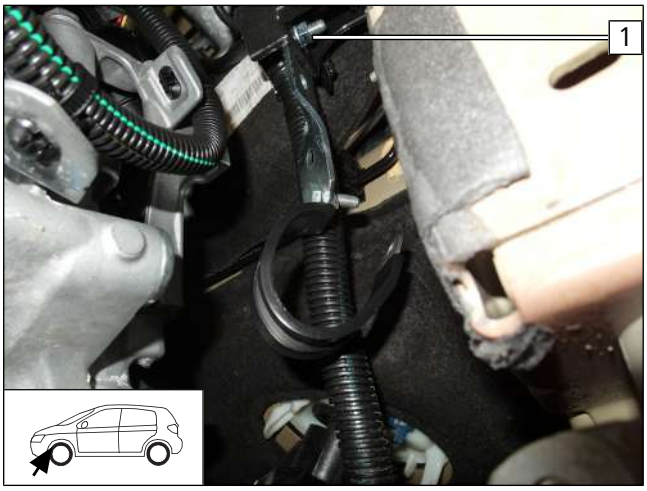


Fig. 100

1 M6x20 bolt, premounted perforated bracket 2, original vehicle hole, flanged nut

Fastening original vehicle wiring harness

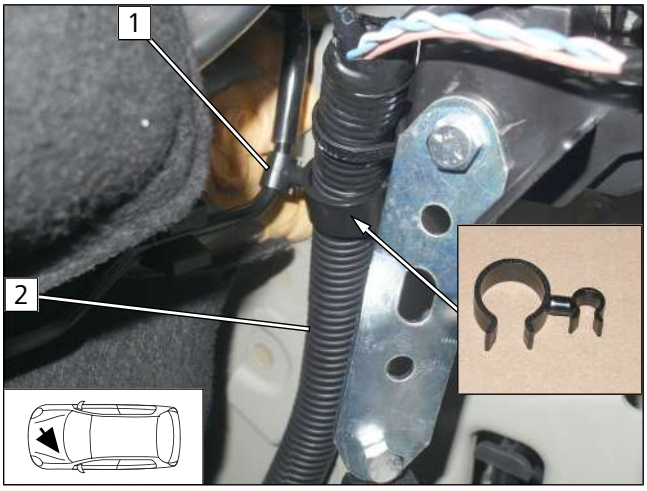


Fig. 101

1 4x24 hose bracket

2 Original vehicle wiring harness

Connecting heater

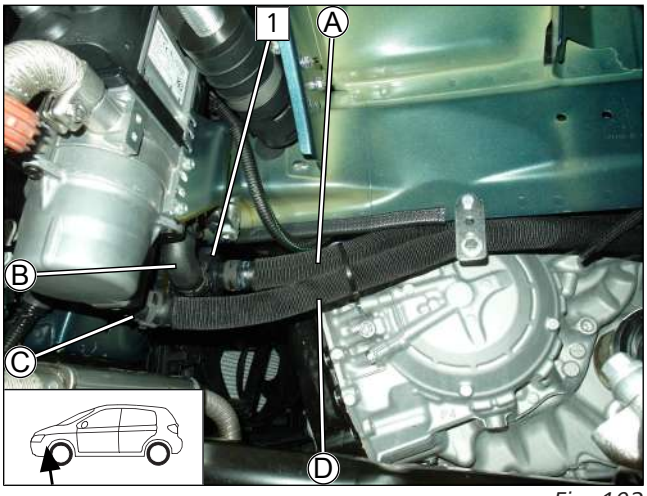


Fig. 102

▶ Connect hose (A) to coolant pump 1. Connect hose (C) and (D).

Routing to the engine compartment

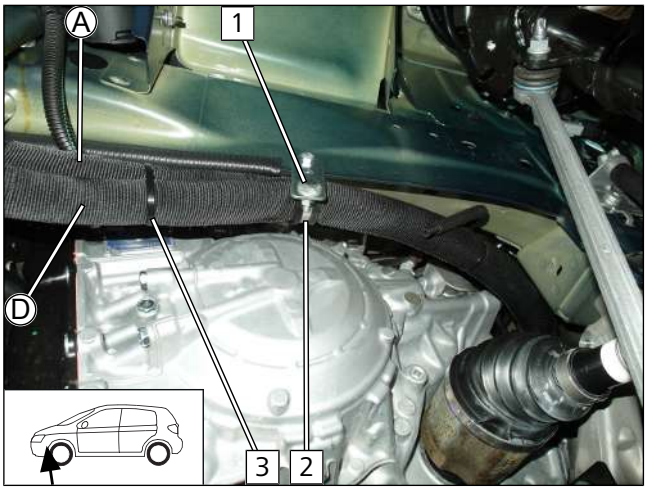


Fig. 103

1 M6x16 bolt, large diameter washer, flanged nut
2 Ø38 rubber-coated p-clamp
3 Cable tie

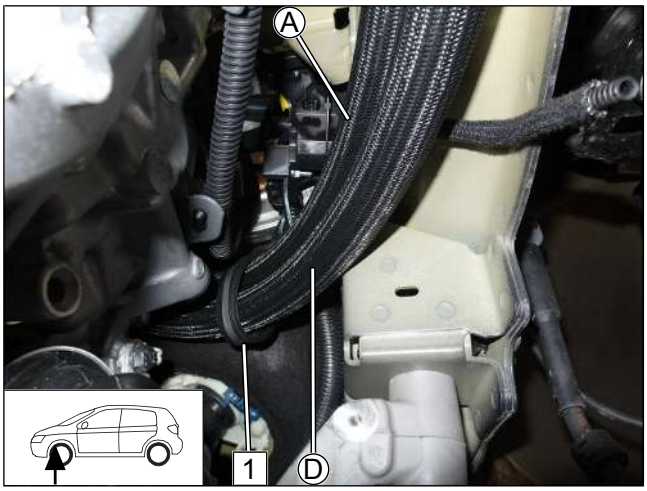


Fig. 104

▶ Route hoses (A) and (D) through Ø38 rubber-coated p-clamp 1, close the pipe clamp and fasten with flanged nut.

12.2.1 Heat exchanger inlet / engine outlet connection - petrol vehicles

Cutting point

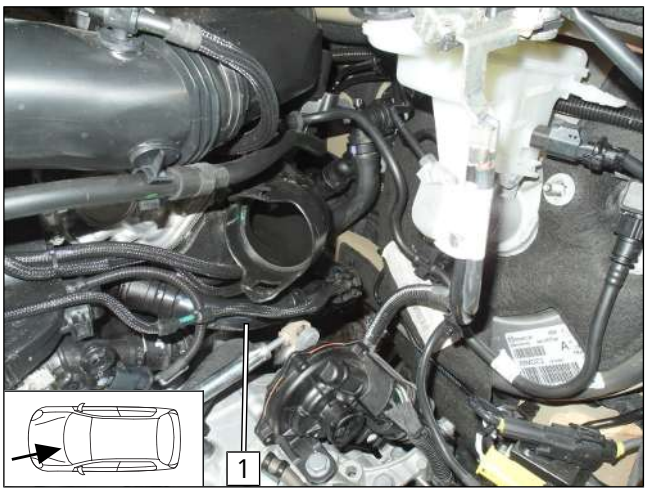


Fig. 105

▶ Remove hose of engine outlet / heat exchanger inlet 1.

Preparing hose

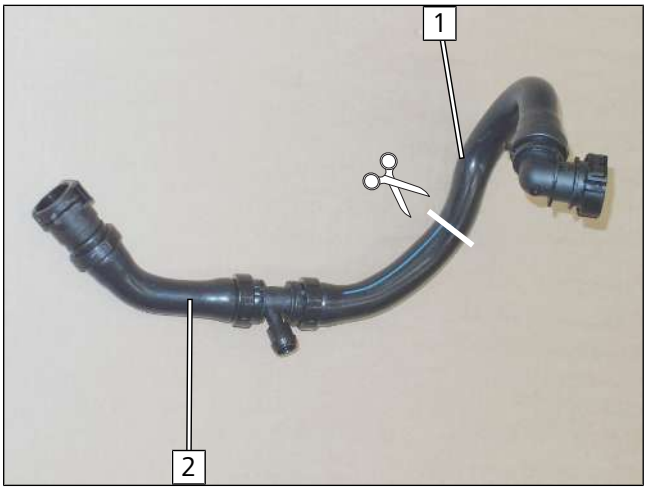


Fig. 106

1 Heat exchanger inlet hose section
2 Engine outlet hose section

Premounting hose sections

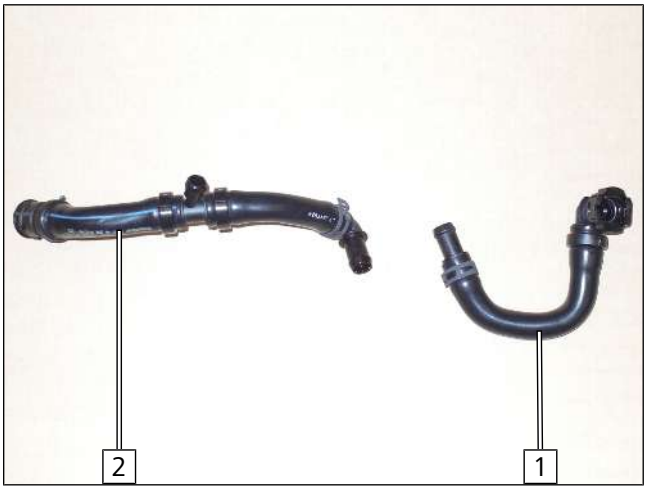


Fig. 107

1 Heat exchanger inlet hose section
2 Engine outlet hose section

Heat exchanger inlet connection

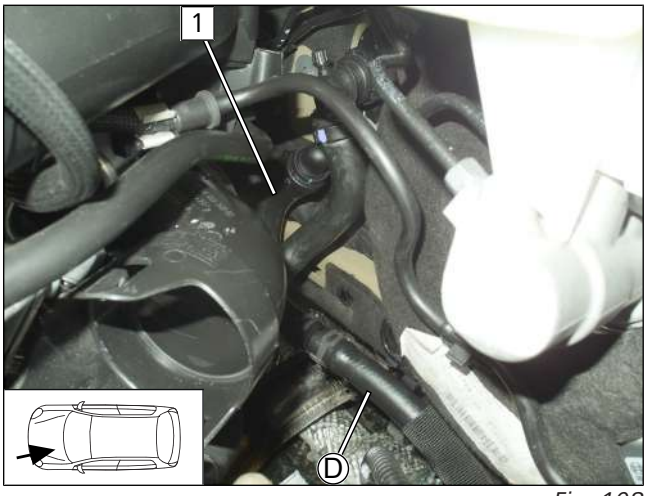


Fig. 108

1 Heat exchanger inlet hose section

Engine outlet connection

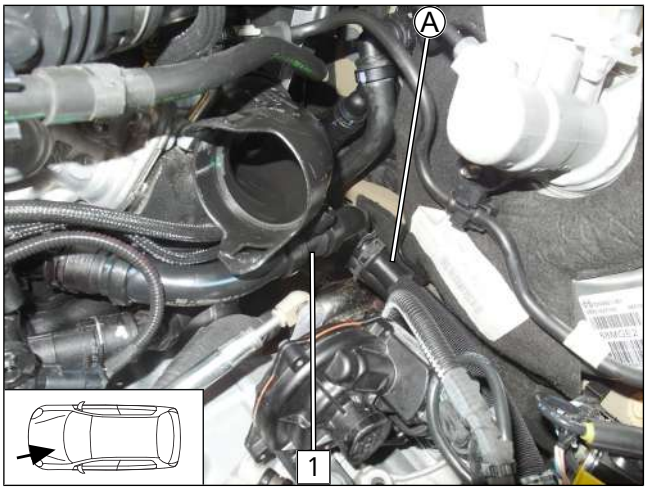


Fig. 109

1 Engine outlet hose section

Aligning hoses

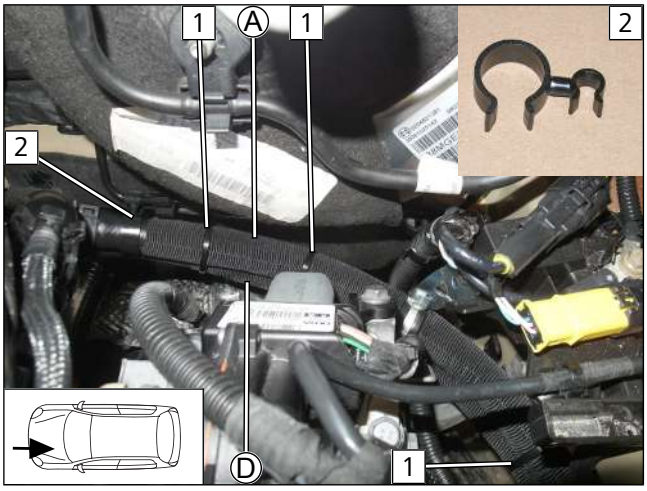


Fig. 110

! Danger of damage to components

▶ Ensure sufficient distance from neighbouring components, correct if necessary.

1 Cable tie

2 Hose bracket on hose (A) and original vehicle brake line

12.2.2 Heat exchanger inlet / engine outlet connection - diesel vehicles

Cutting point

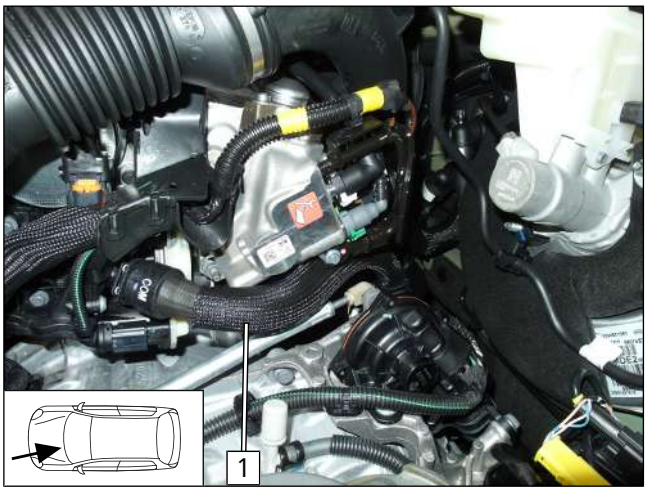


Fig. 111

▶ Remove hose of engine outlet / heat exchanger inlet 1.

Preparing hose

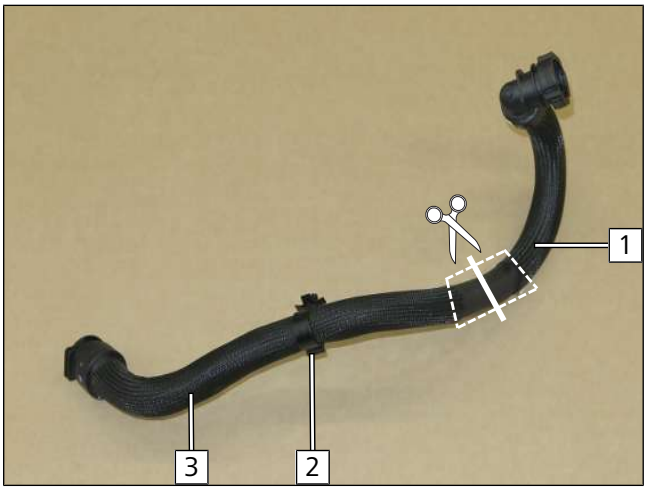


Fig. 112

▶ Remove the fabric tubing protector in the marked area.

1 Heat exchanger inlet hose section
2 Original vehicle hose bracket
3 Engine outlet hose section

Premounting hose sections

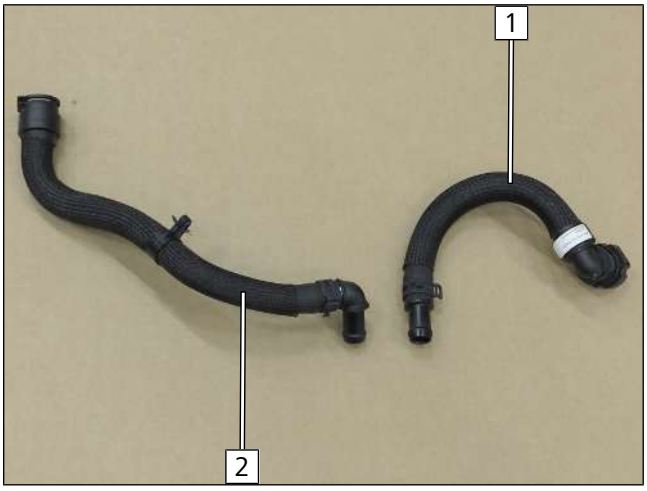


Fig. 113

1 Heat exchanger inlet hose section
2 Engine outlet hose section

Heat exchanger inlet connection

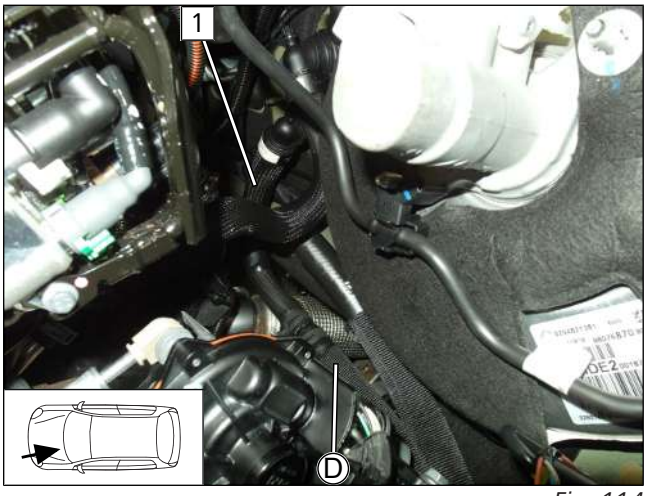


Fig. 114

1 Heat exchanger inlet hose section

Engine outlet connection

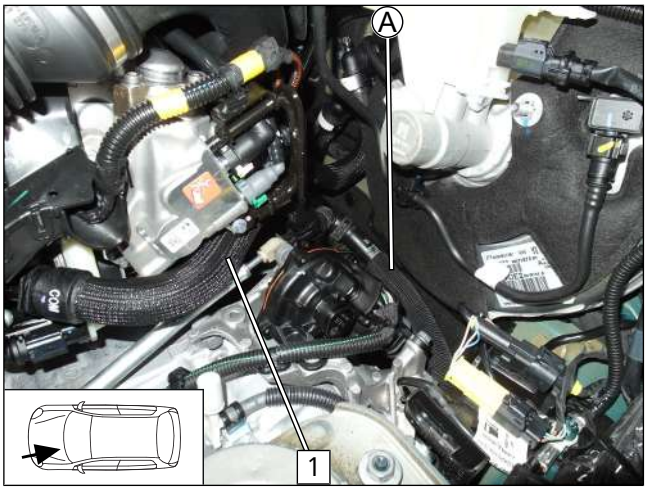


Fig. 115

1 Engine outlet hose section

Aligning hoses

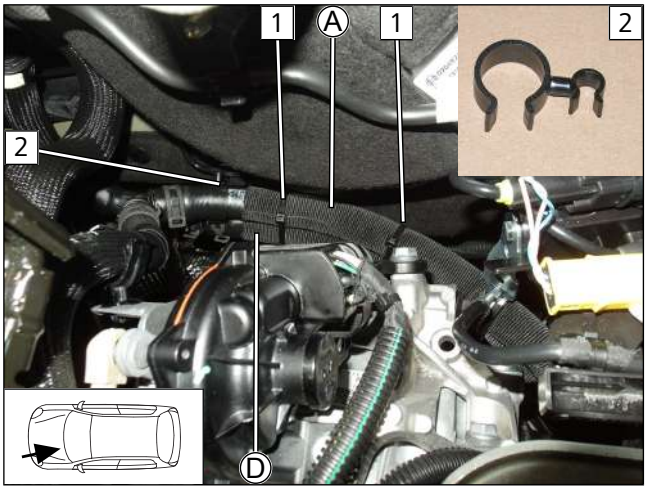


Fig. 116

Danger of damage to components

▶ Ensure sufficient distance from neighbouring components, correct if necessary.

1 Cable tie

2 4x24 hose bracket on hose (A) and original vehicle brake line

13 Exhaust part 2

Drilling hole

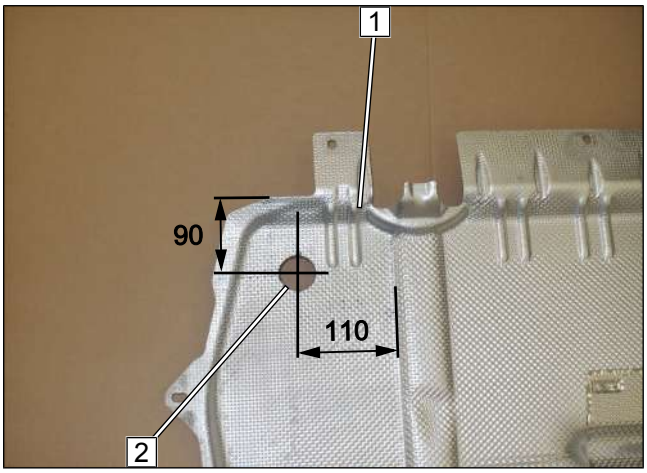


Fig. 117

Observe the EFIX installation instructions.

▶ Work step E1

1 Underride protection
2 Hole

Copying hole pattern, drilling hole

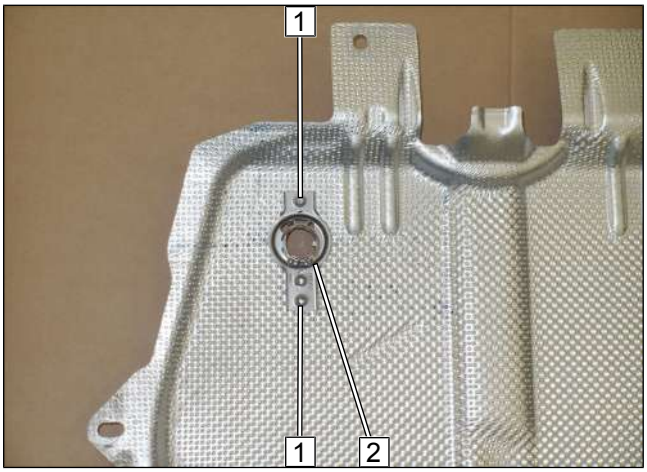


Fig. 118

▶ Work steps E3, E4

1 Hole pattern, hole
2 EFIX

Mounting EFIX

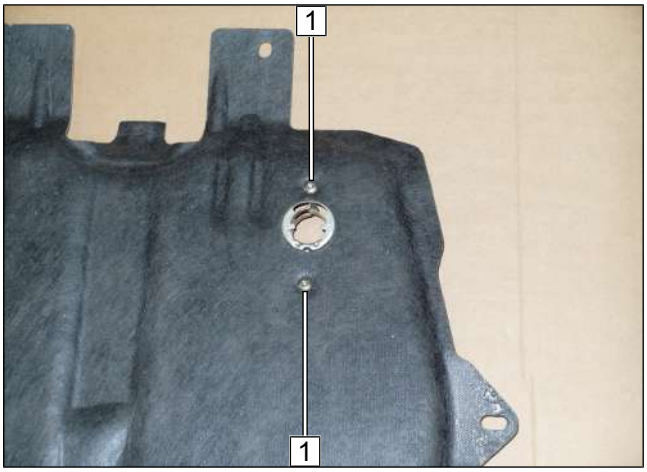


Fig. 119

▶ Work step E5

1 5x13 self-tapping screw

Mounting exhaust pipe **a2** in EFIX

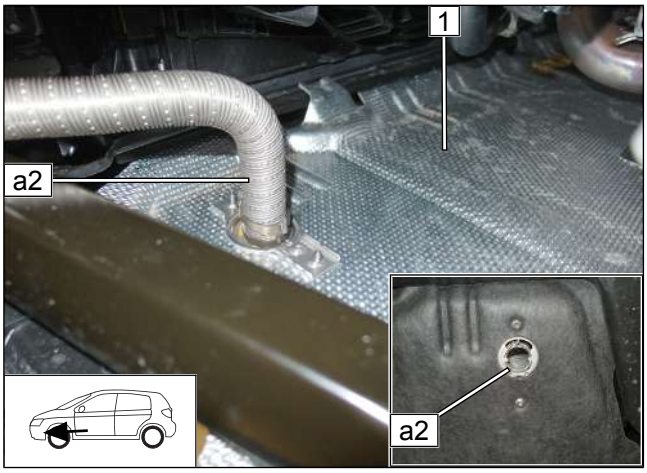


Fig. 120

- ▶ Work steps E6-8
- ▶ Mount underride protection **1**.

14 Final work for exhaust system

Sticking on heat protection film

Fig. 121

▶ Cut the heat protection film [2] in half and stick on wheel-well inner panel [1] as shown.

Checking distance

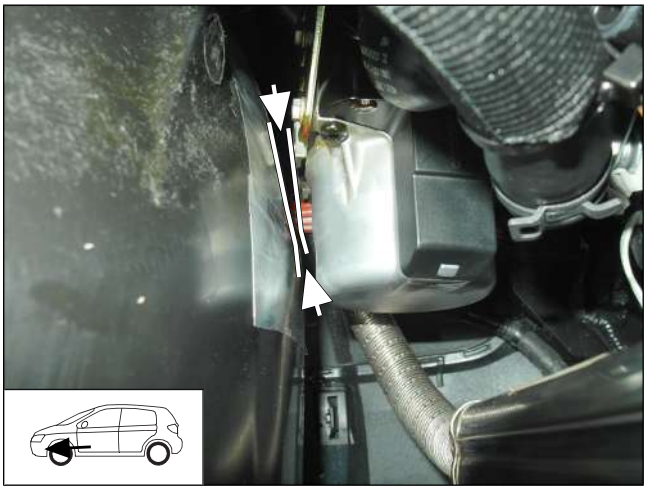


Fig. 122

▶ Mount wheel-well inner panel.

Danger of damage to components

▶ Ensure sufficient distance from neighbouring components, correct if necessary.

15 Electrical system of passenger compartment

15.1 Passenger compartment dismantling instructions

Removing trim strip

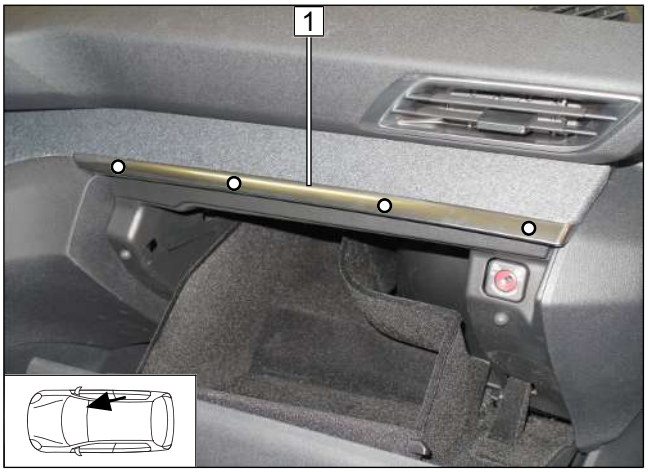


Fig. 123

1 Trim strip (attached with clips)
◯ Attachment points

Removing side trim

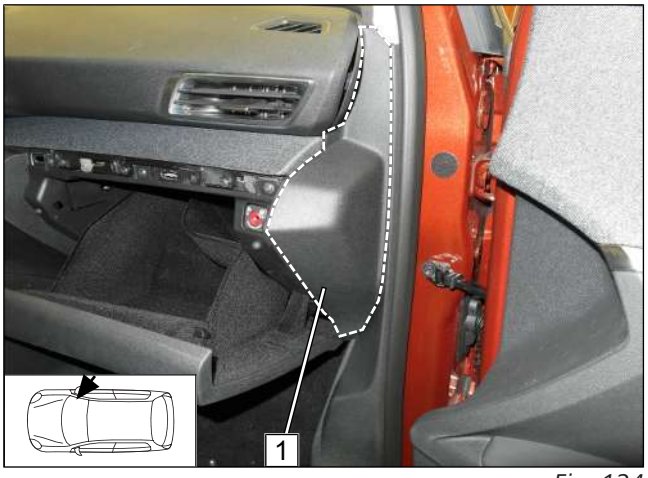


Fig. 124

1 Side trim on the right

Removing footwell trim

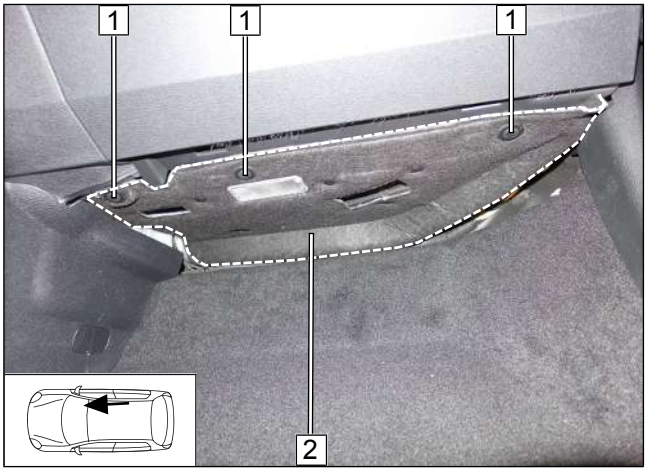


Fig. 125

1 Original vehicle plug
2 Right footwell trim

Removing glove box

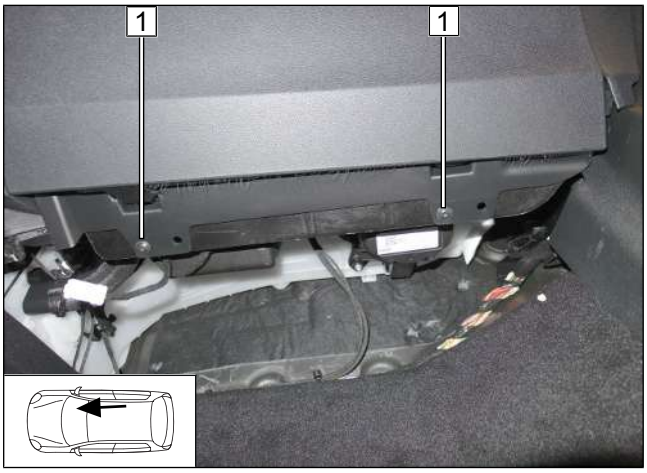


Fig. 126

1 Loosen original vehicle bolts

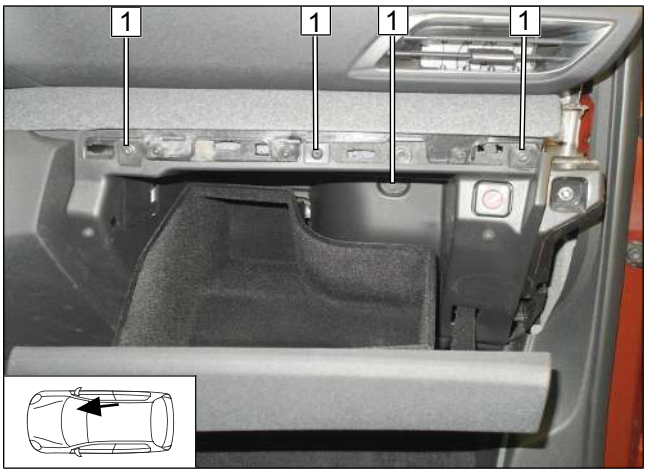


Fig. 127

▶ Loosen original vehicle bolt 1 and remove glove box.

Removing centre tunnel trim

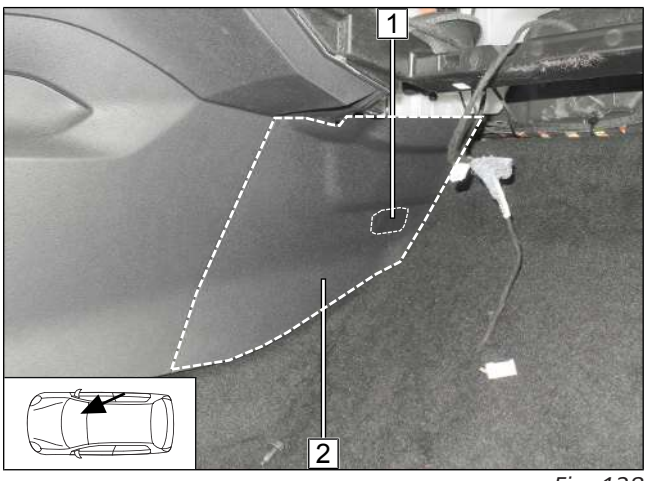


Fig. 128

▶ Remove cap 1 and original vehicle bolt.

2 Centre tunnel trim on the right

Removing trim

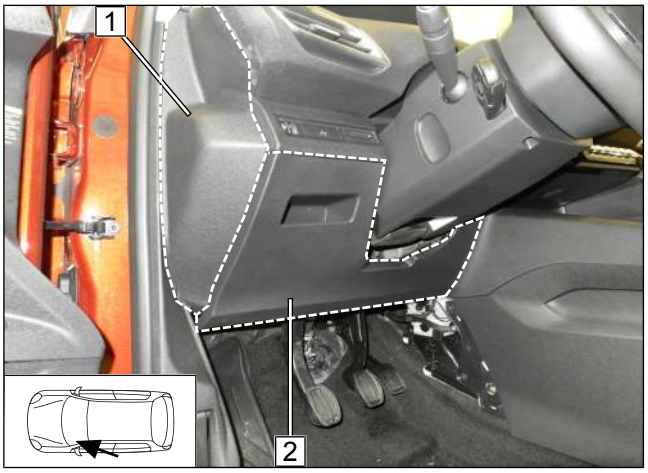


Fig. 129

[1] Side trim on the left
[2] Instrument panel trim

Removing footwell trim

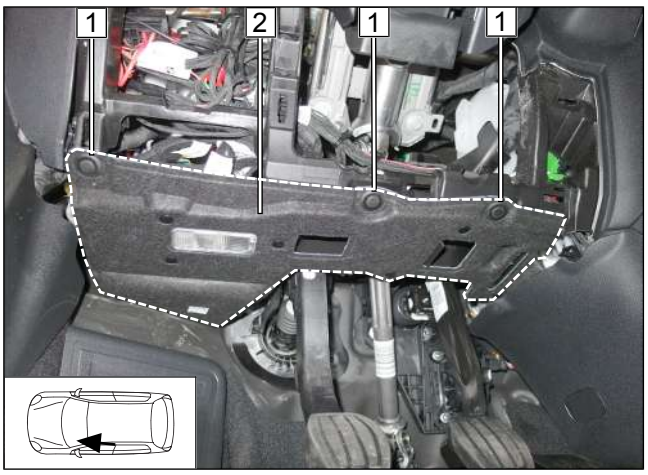


Fig. 130

[1] Original vehicle plug
[2] Left footwell trim

Removing centre tunnel trim

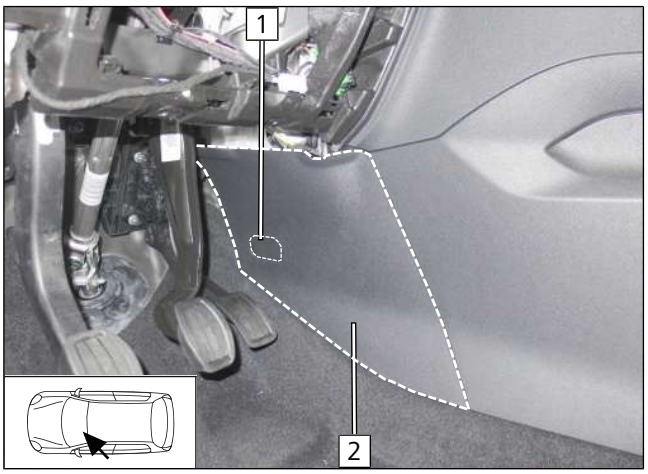


Fig. 131

▶ Remove cap [1] and original vehicle bolt.

[2] Centre tunnel trim on the left

15.2 Preparing electrical system

Assigning, preparing wires

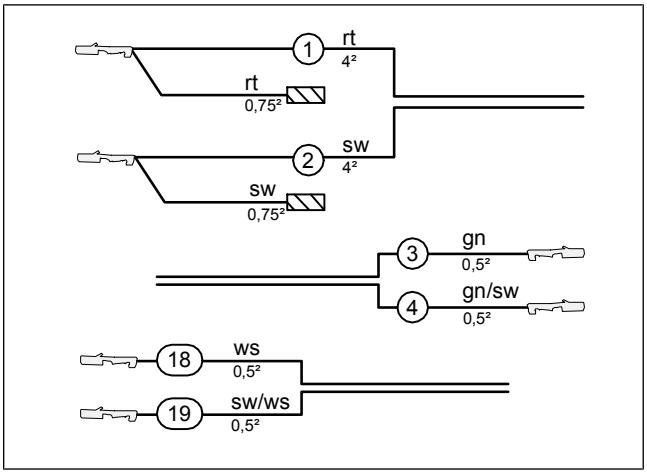


Fig. 132

Wire sections retain their numbering in the entire document.

① Red (rt) wire of fan wiring harness
② Black (sw) wire of fan wiring harness
③ Green (gn) wire from wiring harness of PWM control
④ Green/black (gn/sw) wire from wiring harness of PWM control
⑱ White (ws) wire of isolating relay wiring harness
⑲ Black/white (sw/ws) wire of isolating relay wiring harness

Assigning wires

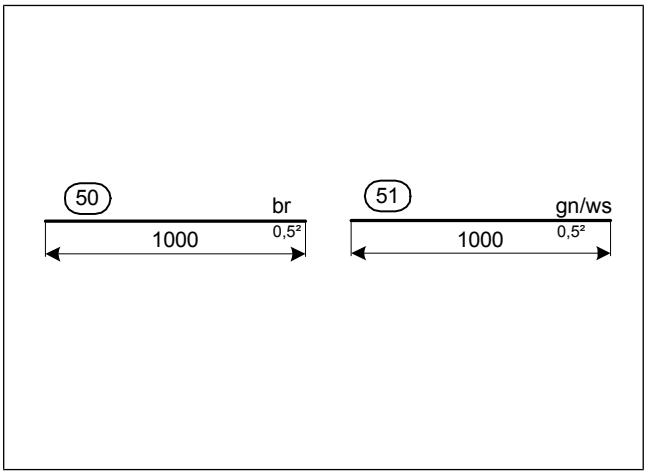


Fig. 133

Preparing / assigning / cutting wires to length

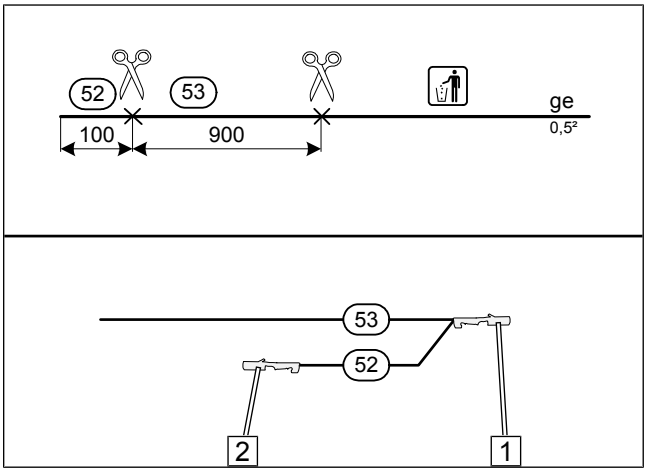


Fig. 134

1 4.8 blade receptacle
2 6.3 blade receptacle

Connecting wires in RSH

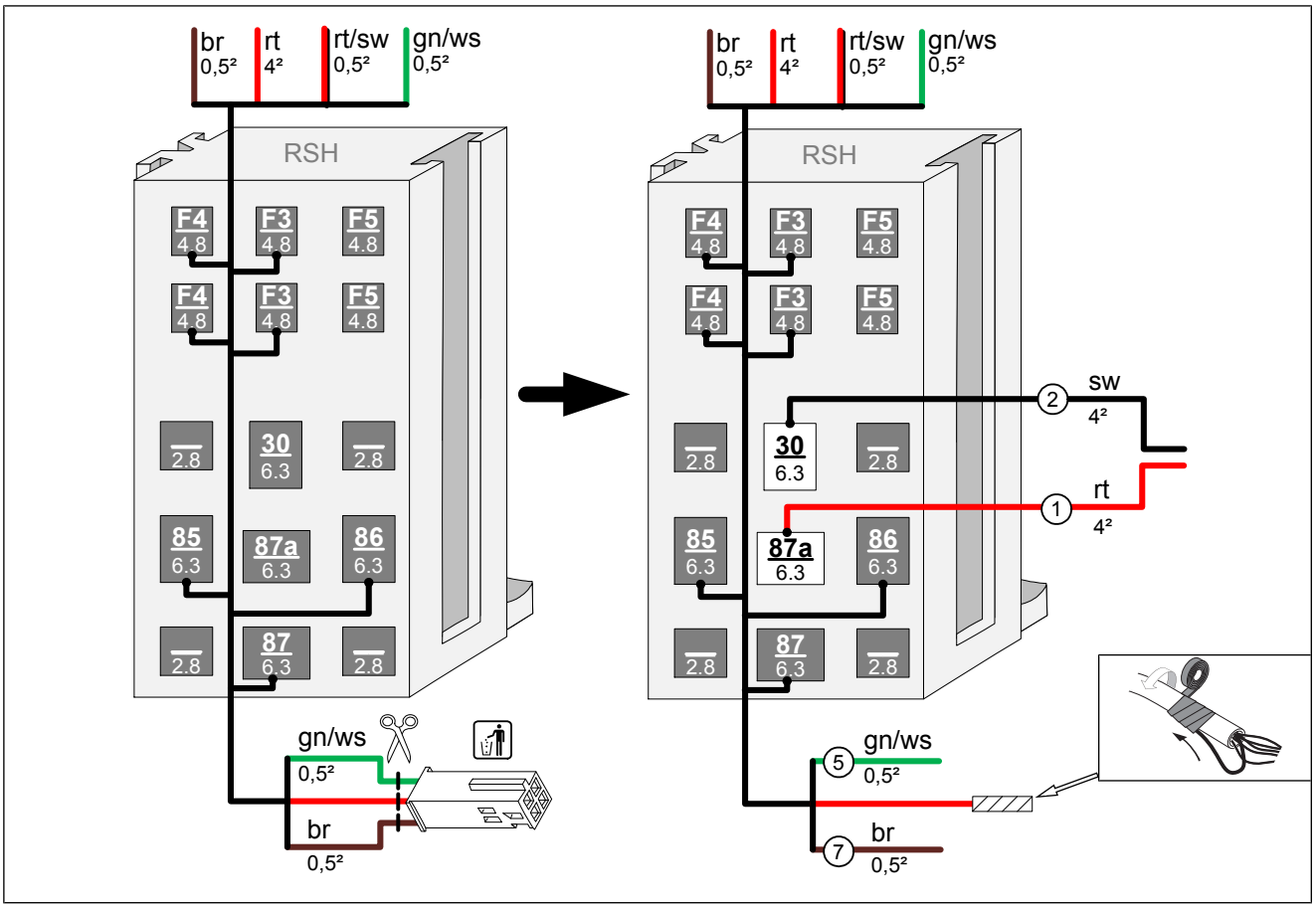


Fig. 135

View of PWM GW

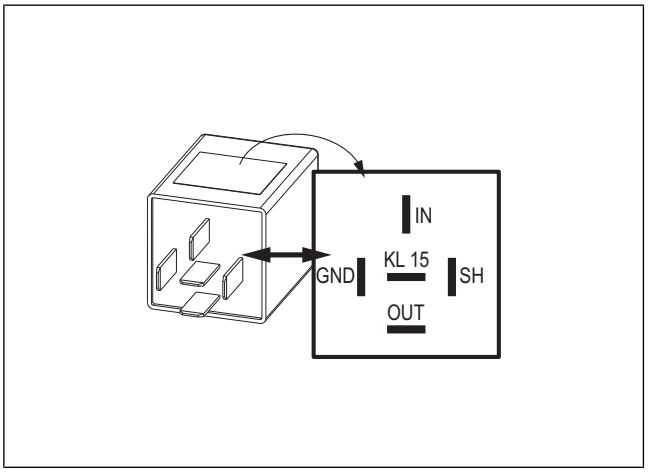


Fig. 136

▶ Check PWM GW settings when starting up the heater and adjust if necessary.

Parameters	Setting
Duty cycle	70%
Frequency	400Hz
Voltage	not relevant
Function	Low side

Connecting / assigning wires to PWM GW socket

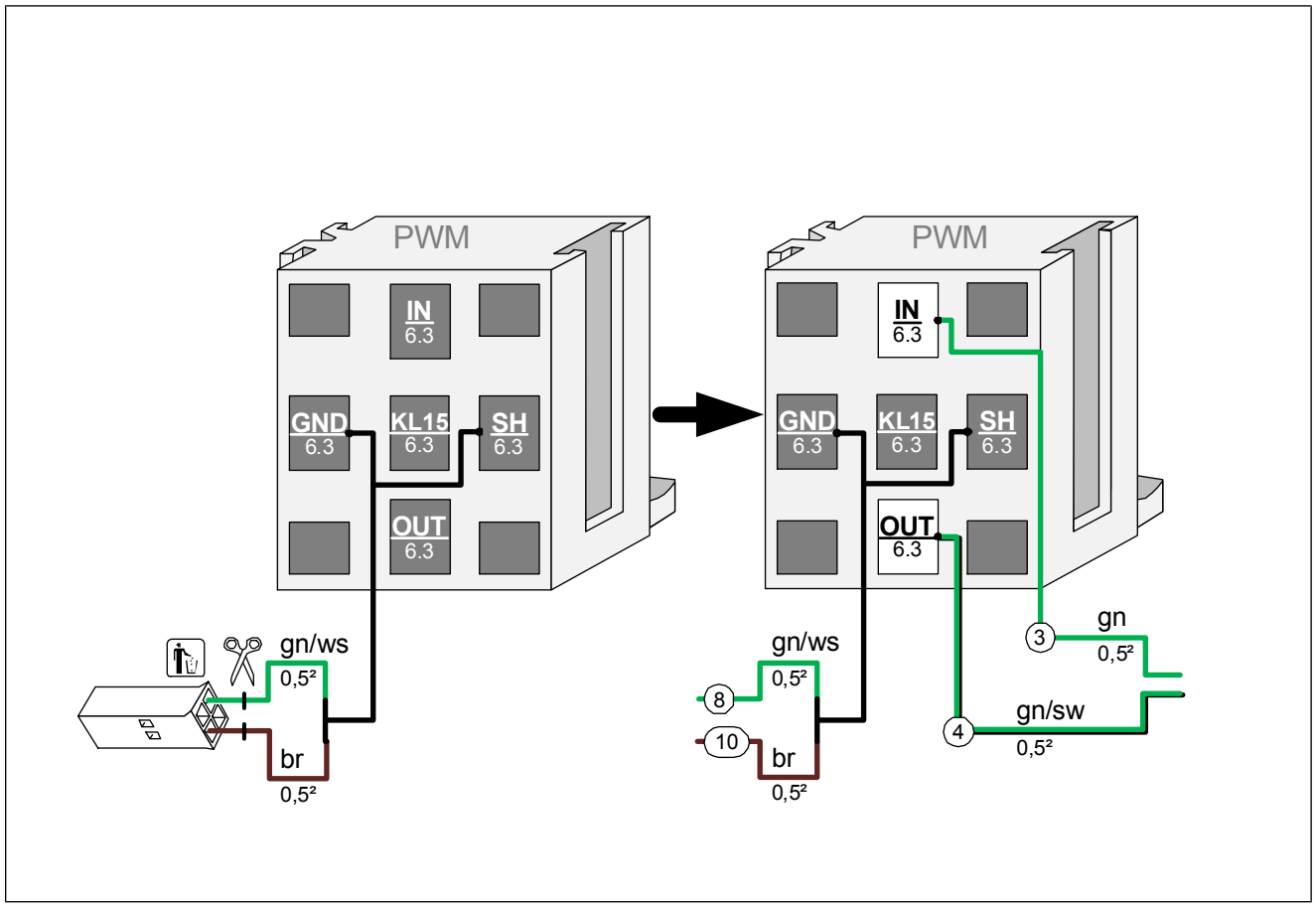


Fig. 137

Connecting wires to K2 relay socket

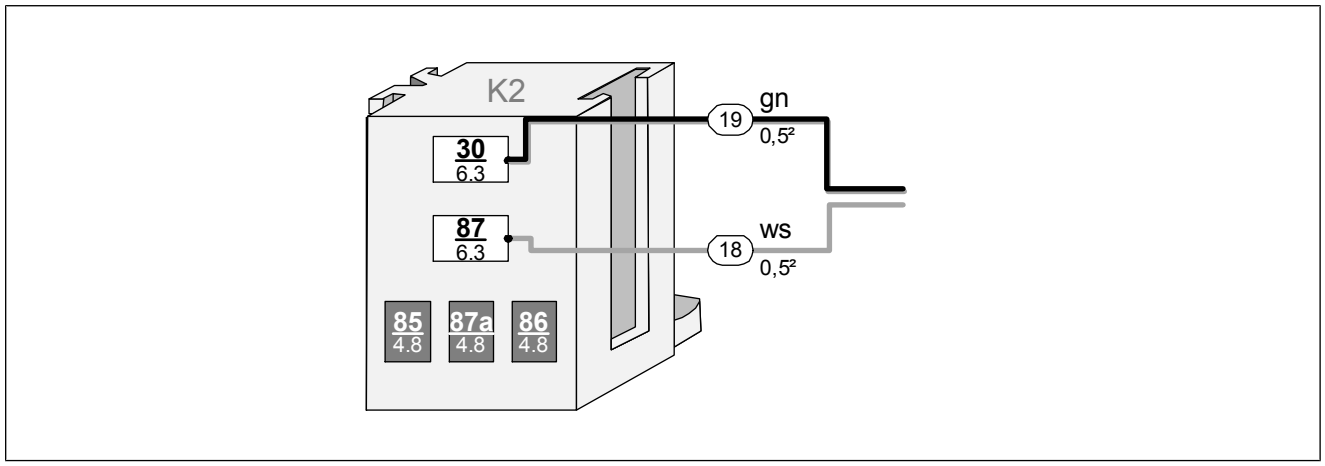


Fig. 138

Assembling K2 relay socket and PWM GW, connecting wires

▶ Draw wires (50), (51) and (53) into provided protective sleeving.

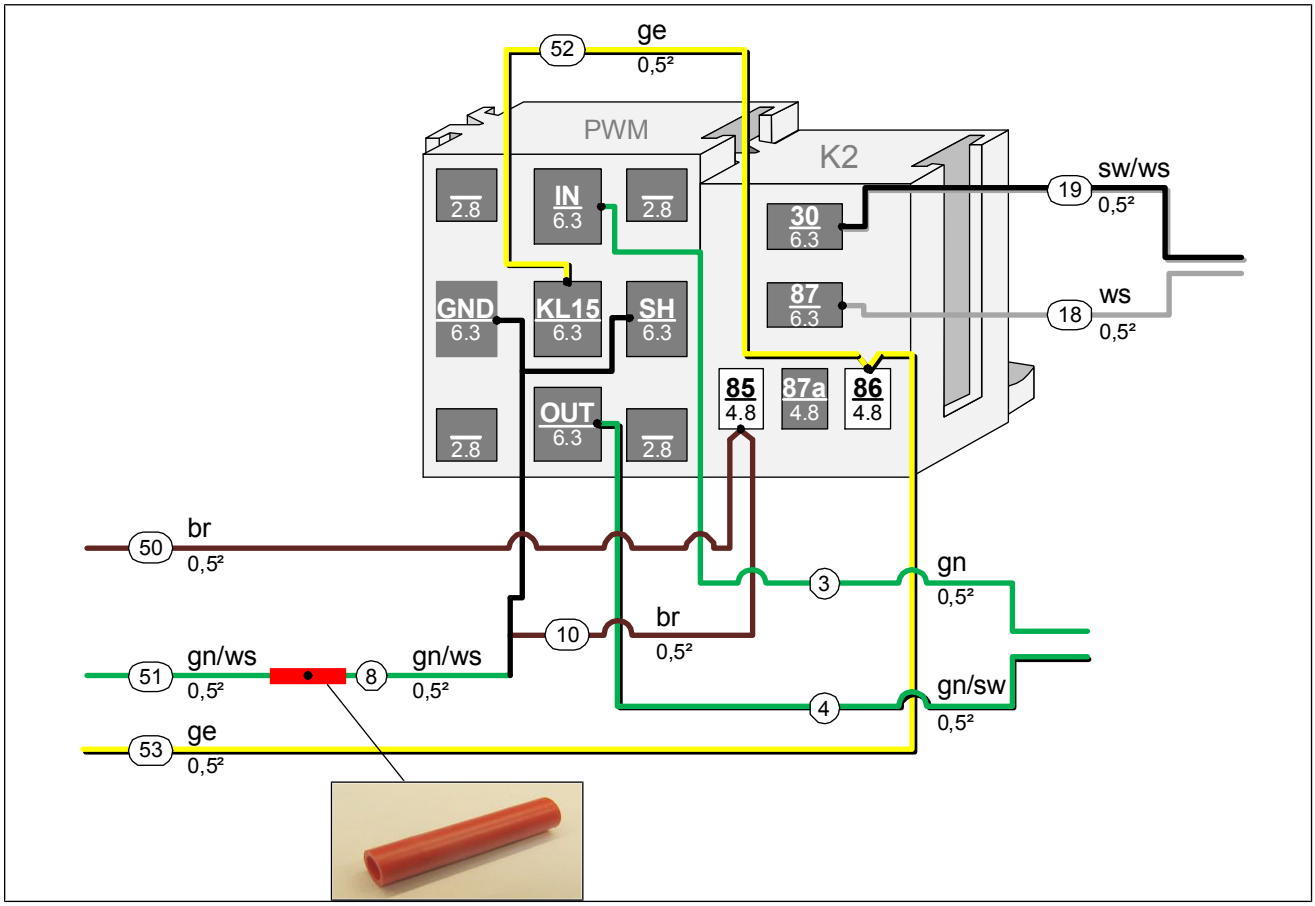


Fig. 139

Premounting K2 relay and PWM GW

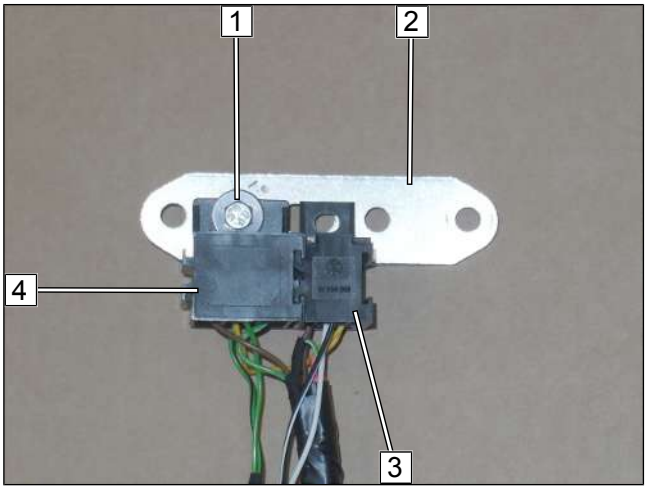


Fig. 140

1 M5x16 bolt, large diameter washer [2x], nut
2 Perforated bracket
3 Relay K2 socket
4 PWM GW socket

Mounting PWM GW

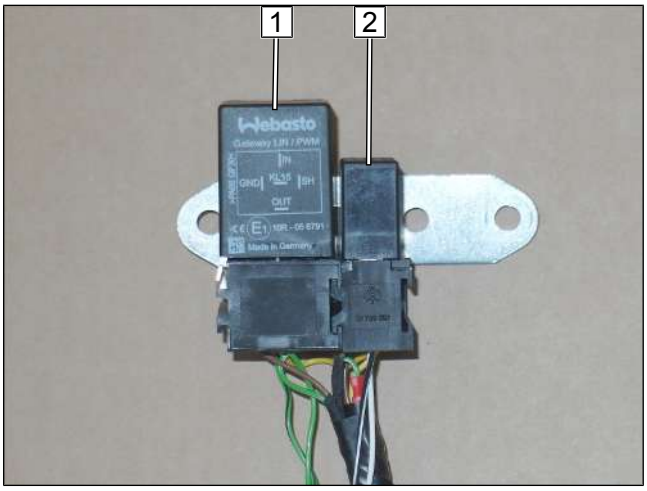


Fig. 141

1 PWM GW
2 Relay K2

15.3 Wiring diagram

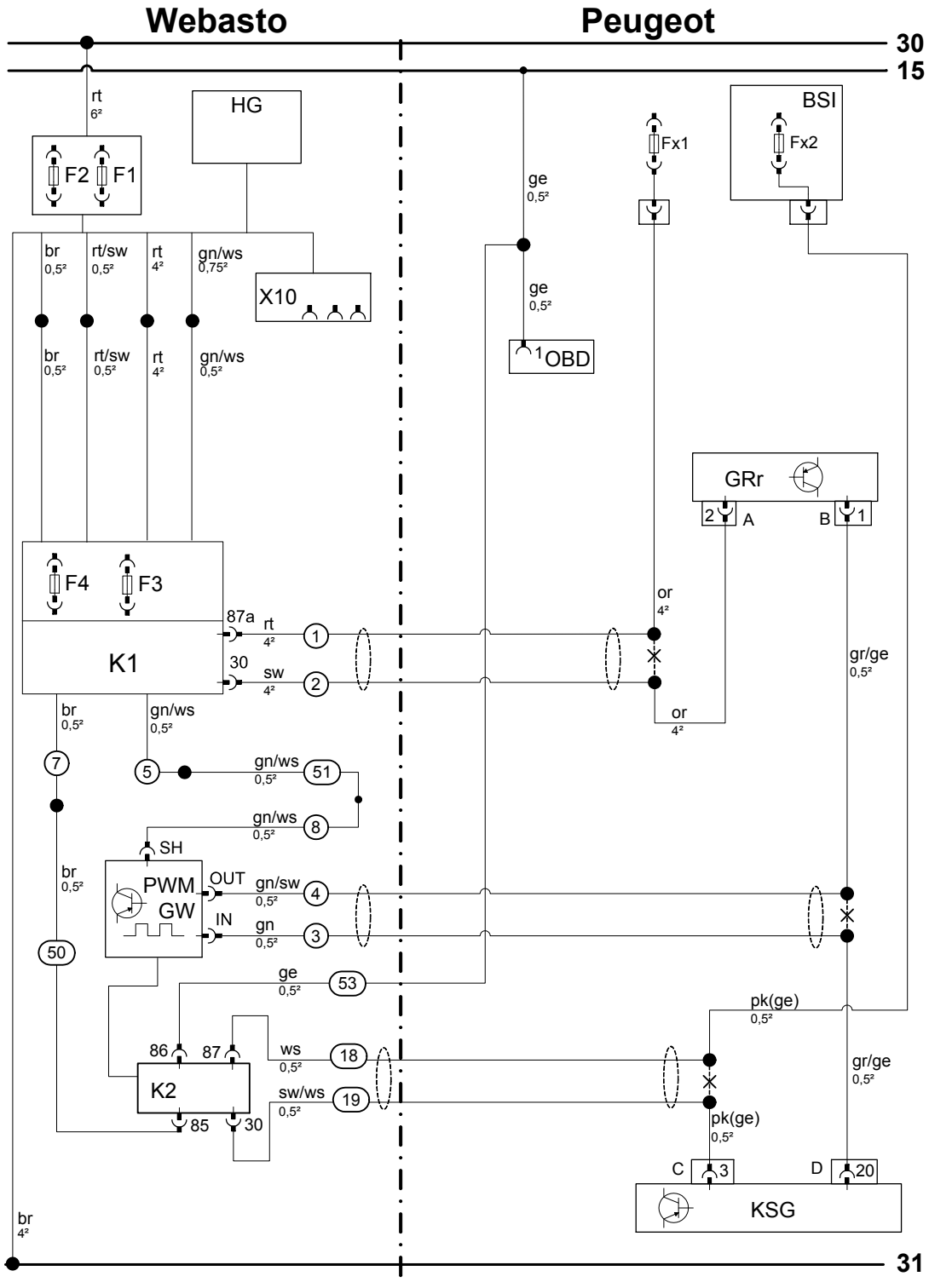


Fig. 142

Legend to wiring diagram

The vehicle connector and component designations are freely chosen by Webasto.
Cable colours may vary.

Vehicle components		Symbols	
Abbreviation	Component	Abbreviation	Designation
BSI	Passenger compartment central electrical box	X	Cutting point
Fx1	Fuse		
Fx2	Fuse		
GRr	Fan controller		
A	2-pin GRr connector		
B	2-pin GRr connector		
OBD	OBD socket outlet		
KSG	Air-conditioning control unit		
C	6-pin KSG connector		
D	40-pin KSG connector		

Webasto components		Cable colours	
Abbreviation	Component	Abbreviation	Colour
A	Connector of CLR module wiring harness	bg	beige
B	Socket of CLR module wiring harness	bl	blue
C	Adapter wiring harness connector	br	brown
D	Adapter wiring harness socket	dbl	dark blue
E	Plug&Play wiring harness connector	dgn	dark green
F	Plug&Play wiring harness socket	ge	yellow
CCL GW	CAN CAN LIN Gateway	gn	green
CL GW	CAN LIN Gateway	gr	grey
CLR	Cold start module	hbl	light blue
D1	Diode	hgn	light green
D2	Diode group	or	orange
F0	Additional fuse for power supply	pk	pink
F1	Heater main fuse	rt	red
F2	Passenger compartment fan controller main fuse	sw	black
F3	Control element fuse	vi	violet
F4	Fan controller fuse	ws	white
F5	Additional fuse		
HG	Heater TT-Evo		
K1	Relay K1		
K2	Relay K2		
K3	Relay K3		
LIN GW	LIN Gateway		
PWM GW	Pulse width modulator gateway		
RSH	Relay and fuse holder of passenger compartment		
RTD	Temperature sensor		
X10	4-pin socket of control element		
Y	Power adapter		

15.4 Fan controller

RSH hole

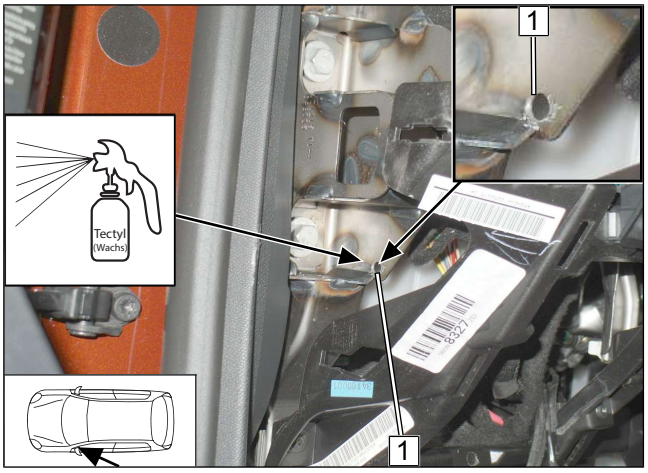


Fig. 143

1 Ø5.5 hole

Mounting RSH

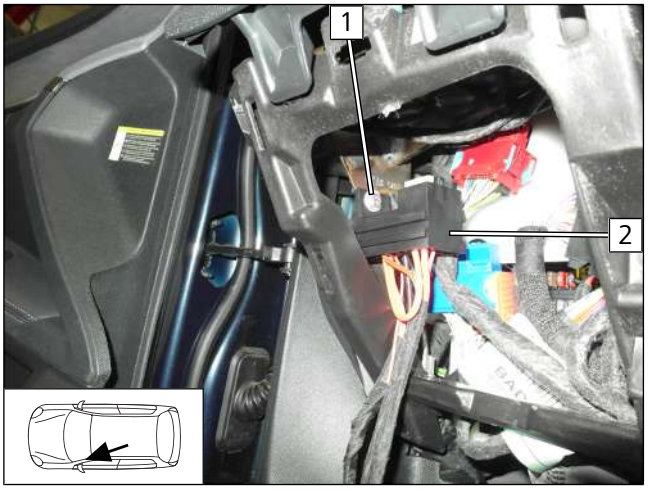


Fig. 144

1 M5x16 bolt, large diameter washer, drilled hole, large diameter washer, nut

2 RSH

Mounting relay K1 and fuse F4

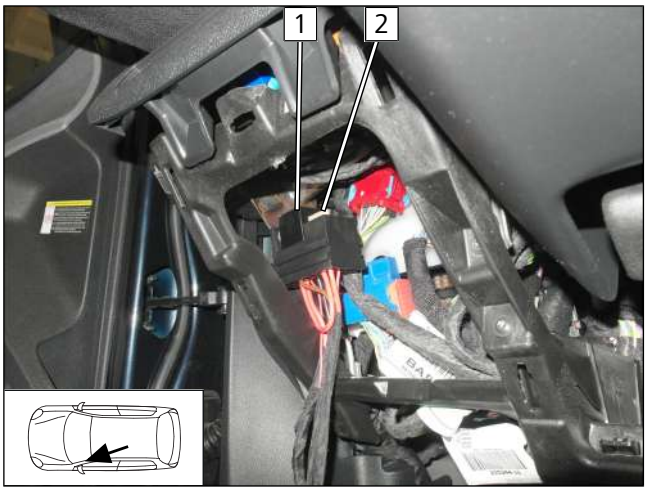


Fig. 145

1 Relay K1

2 Fuse F4: 25A

Connecting same colour wires of wiring harnesses

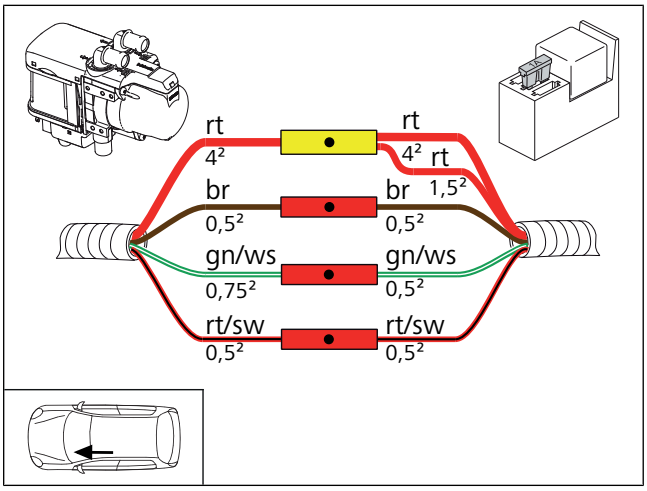


Fig. 146

Mounting K2 and PWM module

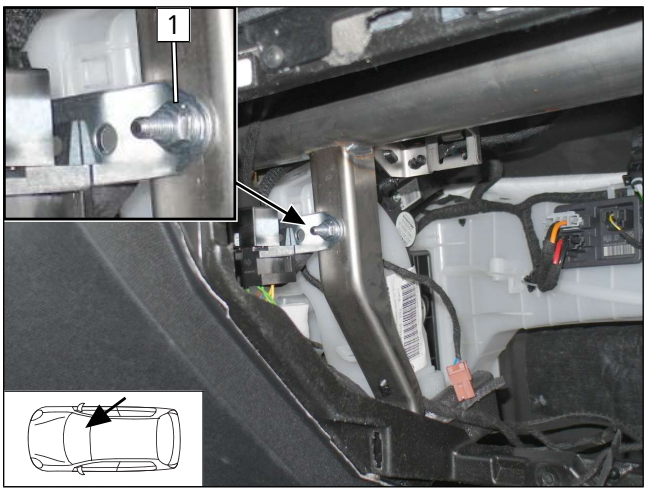


Fig. 147

Version 1

[1] M6x20 bolt, original vehicle hole, perforated bracket, flanged nut

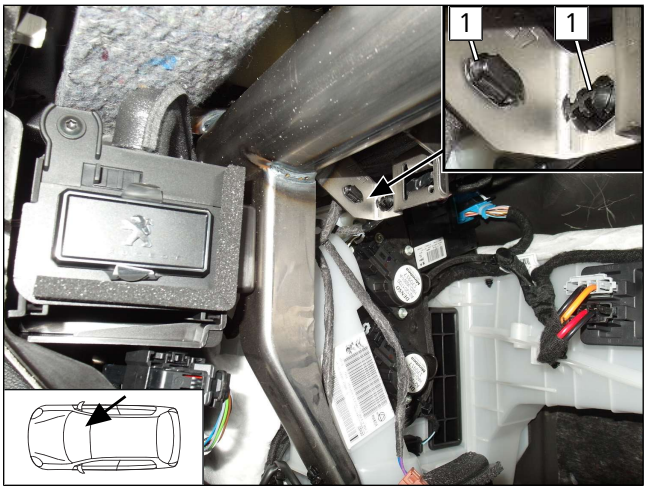


Fig. 148

Version 2

▶ Loosen original vehicle clip-type cable tie [1].

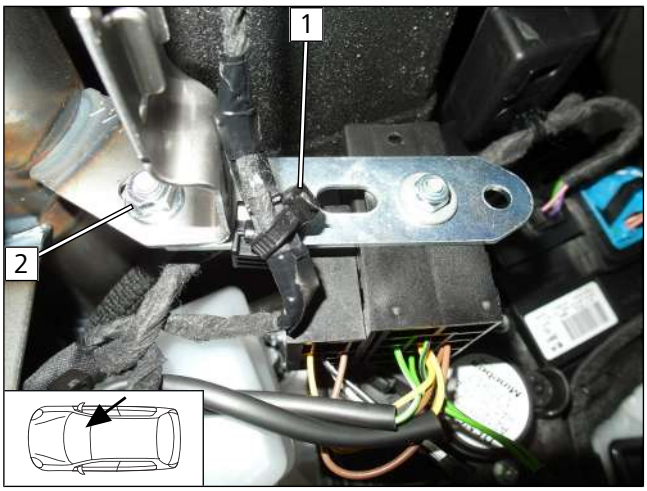


Fig. 149

2 M6x20 bolt, large diameter washer, perforated bracket, original vehicle hole, flanged nut

▶ Fasten original vehicle wiring harness with edge clip cable tie 1.

Connecting line to RSH wiring harness

all vehicles

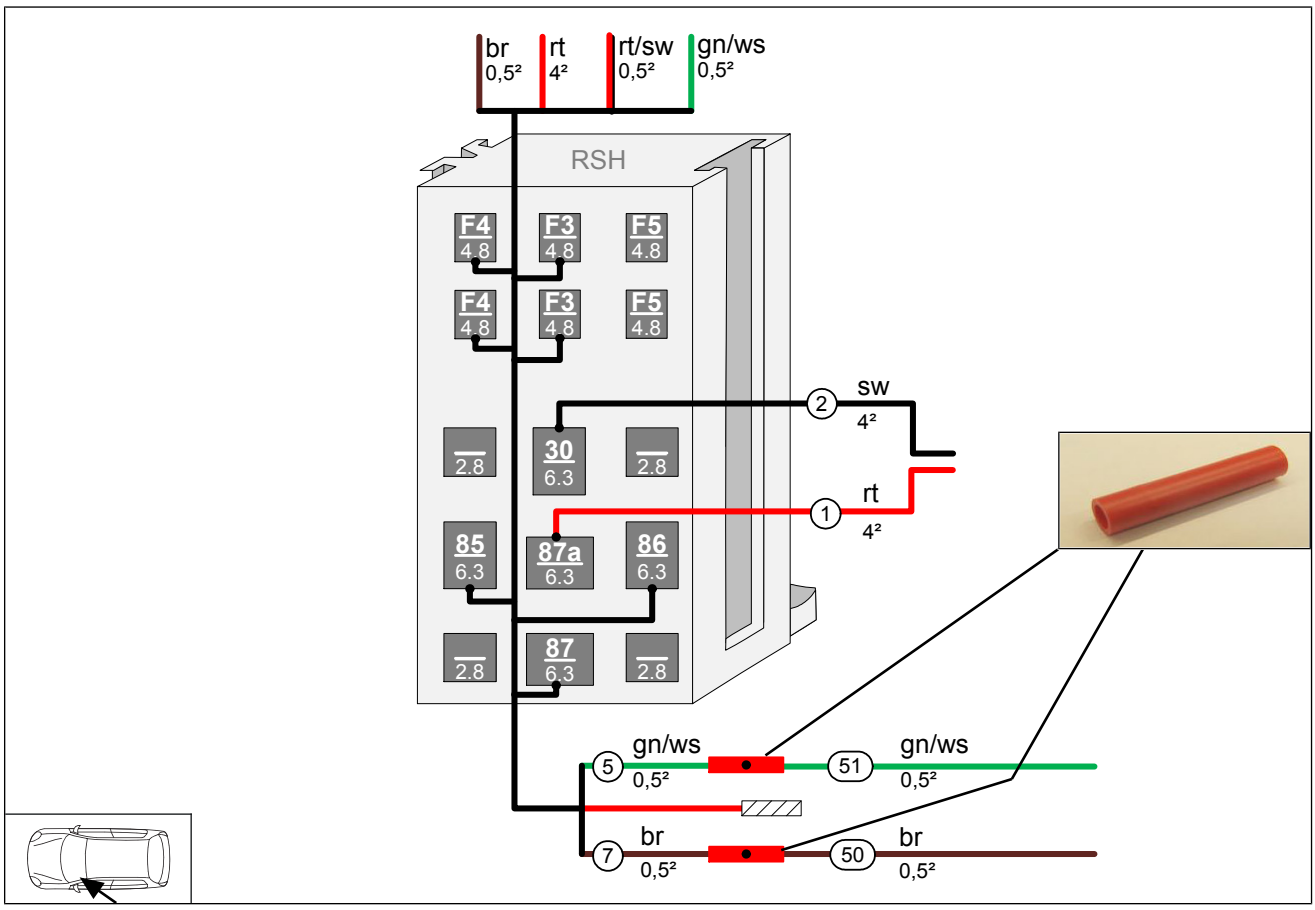


Fig. 150

Connecting fan controller

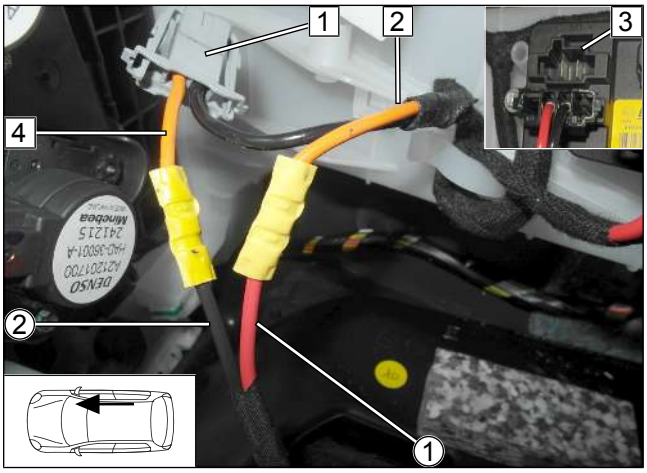


Fig. 151

- 1 2-pin connector A of fan controller
- 2 Orange (or) wire from Fx1 fuse
- 3 Slot A
- 4 Orange (or) wire from connector A/pin 2
- ① Red (rt) wire of fan wiring harness
- ② Black (sw) wire of fan wiring harness

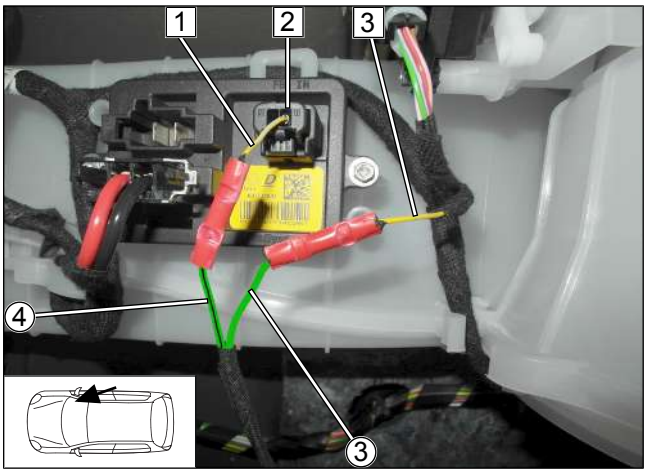


Fig. 152

- 1 Grey/yellow (gr/ge) wire from connector B/pin 1
- 2 2-pin connector B of fan controller
- 3 Grey/yellow (gr/ge) wire from connector D/pin 20
- ③ Green (gn) wire from wiring harness of PWM control
- ④ Green/black (gn/sw) wire from wiring harness of PWM control

Connection to air-conditioning control unit

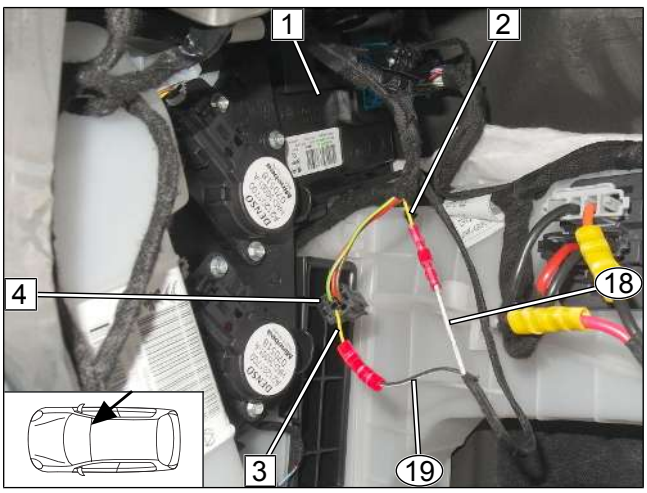


Fig. 153

- 1 Air-conditioning control unit
- 2 Pink (pk/ge) wire from Fx2 fuse
- 3 Pink (pk/ge) wire from C connector/pin 3
- 4 6-pin C connector of air-conditioning control unit
- ⑱ White (ws) wire of isolating relay wiring harness
- ⑲ Black/white (sw/ws) wire of isolating relay wiring harness

Connection to OBD socket outlet

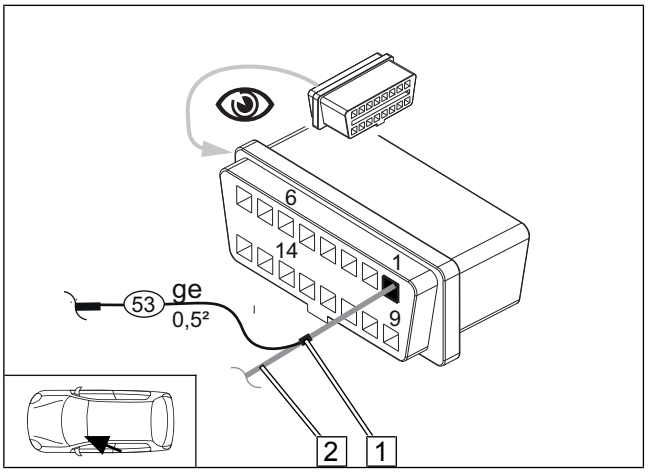


Fig. 154

▶ Remove OBD socket outlet from bracket.

1 Crimp and shrink butt connector
2 Yellow (ge) wire from OBD/pin 1
53 Yellow (ge) wire from relay K2/86

16 Electrical system of control elements

16.1 MultiControl CAR option

Mounting MultiControl CAR

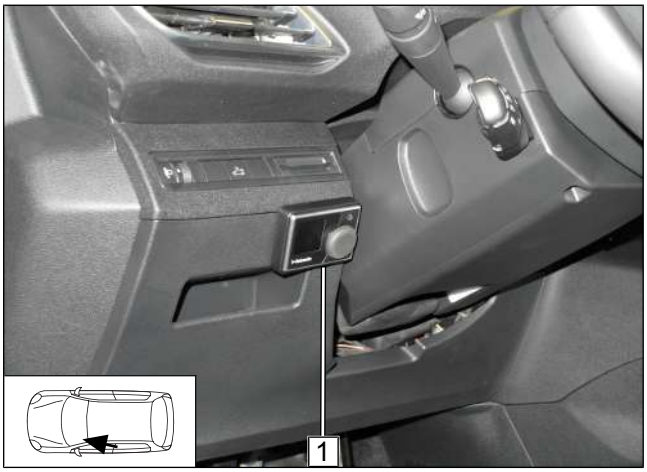


Fig. 155

Observe the MultiControl CAR installation documentation.

1 Installation frame

16.2 Telestart option

Mounting receiver

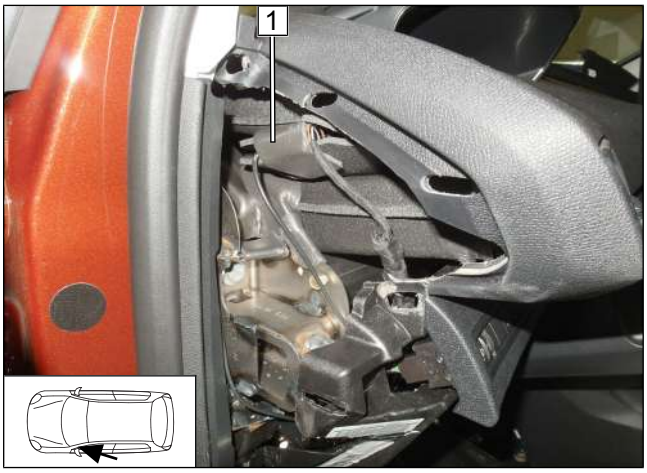


Fig. 156

Observe the Telestart installation documentation.

▶ Fasten the receiver using suitable means 1 as shown.

Mounting temperature sensor, only in case of T100 HTM

Fig. 157

▶ Fasten the temperature sensor at position 1 using a cable tie.

Mounting aerial

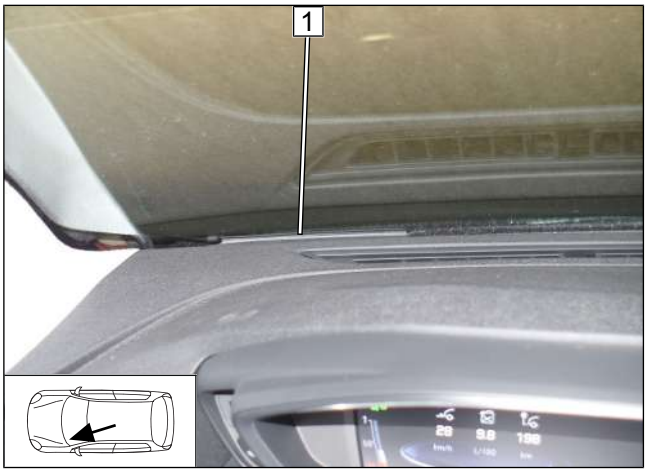


Fig. 158

1 Aerial

16.3 ThermoCall option

Mounting receiver

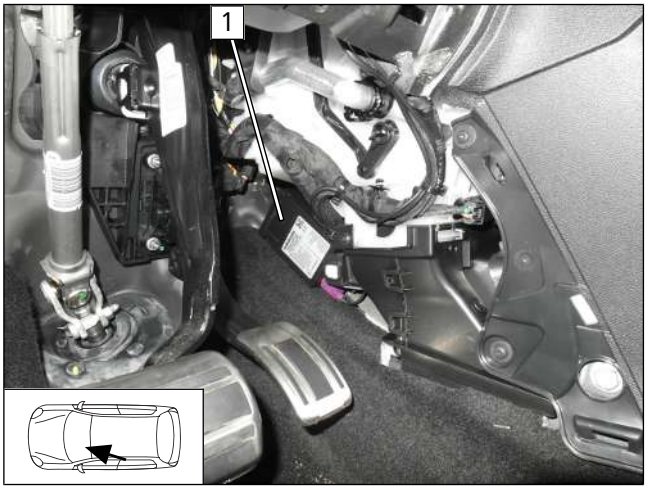


Fig. 159

Observe the ThermoCall installation documentation.

▶ Fasten receiver 1 using double-sided adhesive tape.

Mounting aerial (optional)

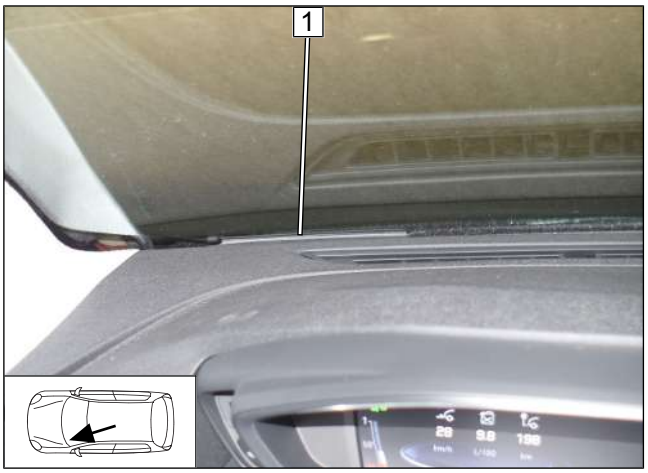


Fig. 160

1 Aerial

17 Final work

Further information can be found in the vehicle manufacturer's technical documentation.

- ▶ Mount removed parts in reverse order.

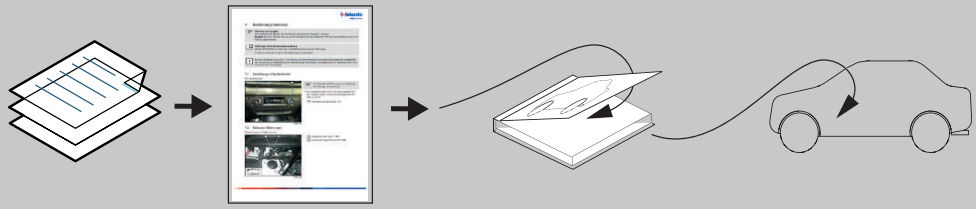
- ▶ Check all hoses, clamps and all electrical connections for firm seating.
- ▶ Insulate and tie back loose lines
- ▶ Spray heater and electrical components with anti-corrosion wax (Tectyl 100K).
- ▶ Connect the battery.

Only use manufacturer-approved coolant.

- ▶ Fill and bleed the coolant circuit according to the vehicle manufacturer's specifications.

Further information can be found in the general installation and operating instructions of the Webasto components.

- ▶ Program MultiControl CAR, teach Telestart transmitter
- ▶ See general heater installation instructions for notes on initial start-up and function check
- ▶ Make settings on A/C control panel according to the 'Operating Instructions'
- ▶ Affix 'Switch off parking heater before refuelling' caution label in area of filler point



These are the original instructions. The German language is binding.
You can request your language if it is missing. The telephone number of each country can be found in the Webasto service centre leaflet or the website of the respective Webasto representative of your country.

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CE

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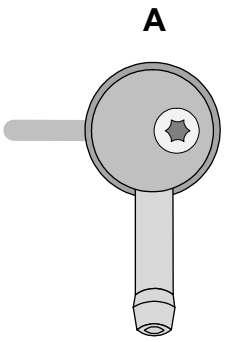
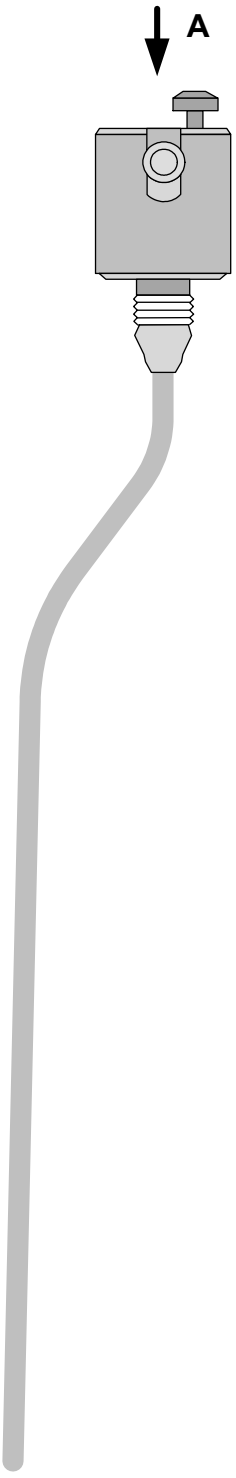
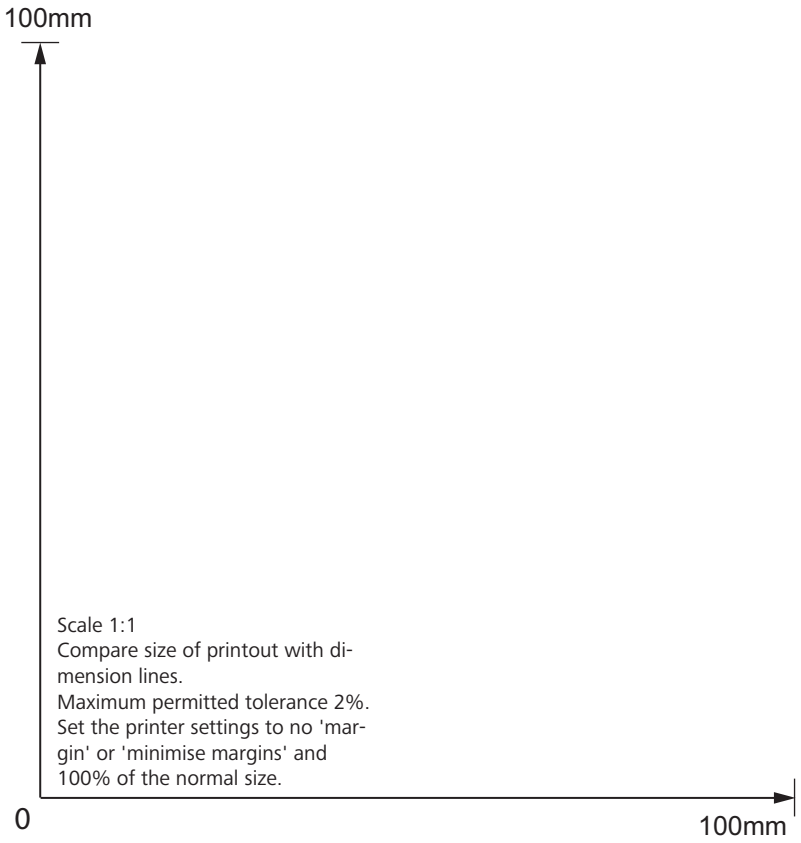
18 FuelFix template for petrol vehicles

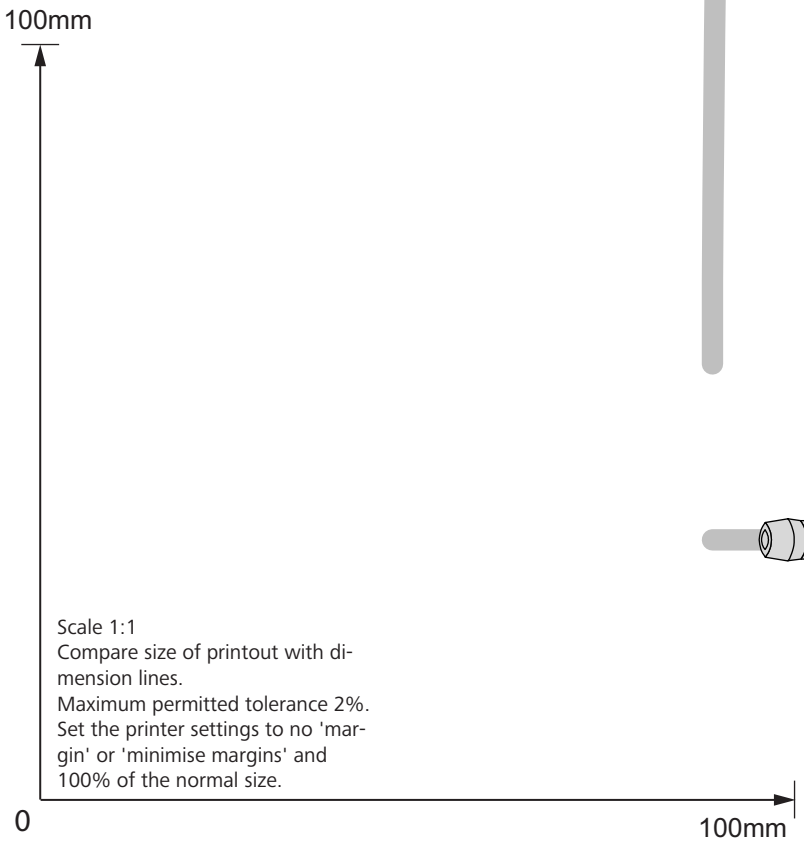






Scale 1:1
Compare size of printout with dimension lines.
Maximum permitted tolerance 2%.
Set the printer settings to no 'margin' or 'minimise margins' and 100% of the normal size.

19 FuelFix template for diesel vehicles



Scale 1:1
Compare size of printout with dimension lines.
Maximum permitted tolerance 2%.
Set the printer settings to no 'margin' or 'minimise margins' and 100% of the normal size.

20 Operating instructions

Information regarding the heating time:

We recommend matching the heating time to the driving time (heating time = driving time)
Example: for a driving time of approx. 20 min. (in one direction), we recommend not exceeding a switch-on time of 20 min.

Vehicles with passenger compartment monitoring:

Further information can be found in the vehicle operating instructions.

▶ Deactivate passenger compartment monitoring for the heating operation

Note for parking heater function

Your vehicle is equipped with a passenger compartment and engine preheating unit.

20.1 A/C control panel settings

Automatic A/C control panel

Fig. 161

Before parking the vehicle, make the following settings:

▶ The fan speed must not be preset.

1 Temperature on both sides to 'Hi'
2 Air outlet to 'upwards'

20.2 Installation location of fuses

Fuses in engine compartment

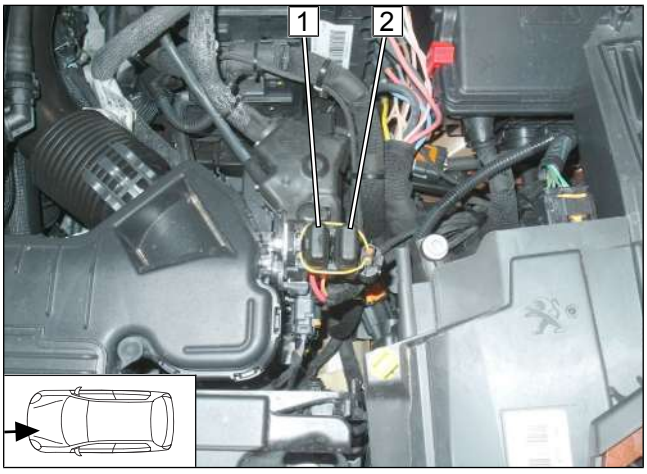


Fig. 162

Petrol only

1 F2 - 30A main fuse of passenger compartment
2 F1 - 20A heater fuse

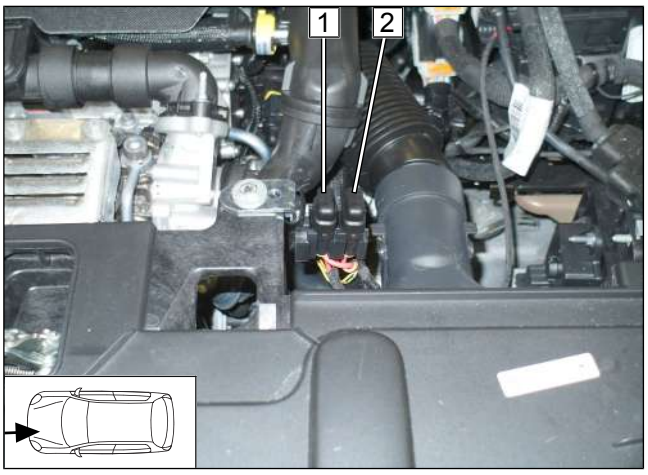


Fig. 163

Diesel only

1 F2 - 30A main fuse of passenger compartment
2 F1 - 20A heater fuse

Fuses in passenger compartment

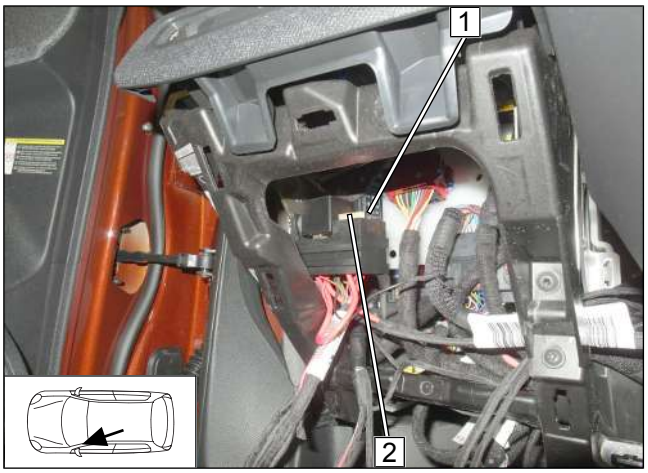


Fig. 164

all vehicles

1 F3 - 1A control element fuse
2 F4 - 25A fan controller fuse